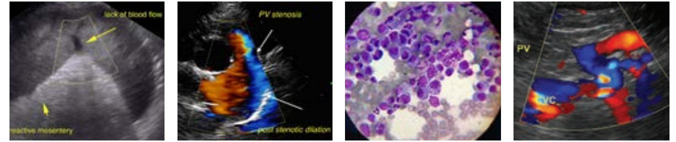

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1-800-838-4268 info@sonopath.com

PATIENT

Tillie Nolan

SPECIES

Canine

BREED

Yorkshire Terrier

SEX

Spayed Female

AGE

11 Years

WEIGHT

6.4 Pounds

INTERPRETED BY

Eric Lindquist, DMV

DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Diane McFadden, RVT

HOSPITAL NAME

Rockaway AH

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PRESENTING CLINICAL SIGNS

decreased appetite, one episode of vomiting; rads show folded spleen, very enlarged stomach, concern for chronic bronchitis. possible mass effect cranial mediastinum
Abnormal PE/Chem/CBC/UA Results: elevated BUN, CPL abnormal

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			1.3	1.1	--	--	NM
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	--	1.2	0.9		1.44	--	

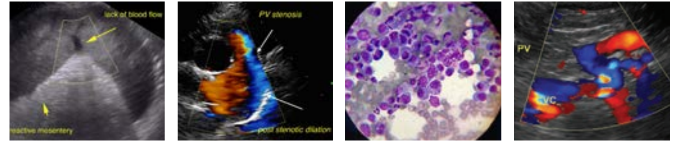
Cardiac Presentation

The **echocardiogram** presented a prominent **right heart** with mild **right ventricular** hypertrophy, without significant **tricuspid** regurgitation, and normal **right atrial** size. No evidence of neoplasia was noted in the right auricle, or elsewhere in the heart. **Pulmonic outflow** velocity was normal at 0.9 m/sec. Insufficiency noted at 2.09 m/sec. No overt heartworms were noted in the main or visible deep pulmonary arteries. Yet, theoretically heartworms could be present in the deep pulmonary vasculature out of visible sonographic range. More likely, however, this prominent right heart is due to excessive intra-thoracic pressures caused by chronic respiratory disease or potentially excessive intra-thoracic fat (Pickiwickian syndrome). The **left heart** demonstrated a linear **ventricular septum**. Contractility was functionally adequate demonstrated by the FS% measurement. The **mitral valve** was not significantly insufficient and no significant **left atrial** dilation was noted. The **left ventricular outflow** demonstrated normal flow patterns and velocities through the aortic valve. No evidence of tumor, pericardial or pleural effusion was noted. The cranial mediastinum revealed a hypoechoic, mildly enlarged lymph node measuring 1.5 cm, likely draining abdominal pathology. A large amount of cranial mediastinal fat also noted.

Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased



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echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. The right kidney measured 3.5 cm.

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 1.38 cm x 0.52 cm at the caudal pole and 0.47 cm at the cranial pole.

Spleen

The **spleen** presented a hypoechoic nodule measuring 0.94 cm in the mid cranial body. The spleen was folded upon itself caudally. A 2.3 cm x 2.3 cm hypoechoic mass was noted in the caudal pole of the spleen. Regional free fluid noted. The larger splenic mass appeared to be peripherally inflamed

Liver

The **liver** was heterogeneous with hypoechoic nodular changes. A 2.5 cm hypoechoic nodule was noted in the left cranial liver. The gallbladder was unremarkable.

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

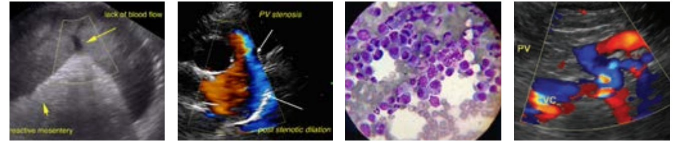
The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxyphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

ULTRASONOGRAPHIC FINDINGS

- Cor pulmonale presentation, compensated, not clinically significant.
- Splenic mass with regional inflammation and separate splenic nodule
- Undefined nodular hepatic changes - Pronounced nodular hyperplasia or metastatic disease possible.
- Slight cranial mediastinal lymphadenopathy – concern for early spread, yet this may be a reactive node.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Ultrasound guided FNA of the splenic and hepatic pathology could be considered. The cranial mediastinal lymph node is too small to sample. Otherwise, direct splenectomy with liver inspection and biopsy could be performed after 3-view chest radiographs. Multicentric round cell neoplasia or hemangiosarcoma suspected.



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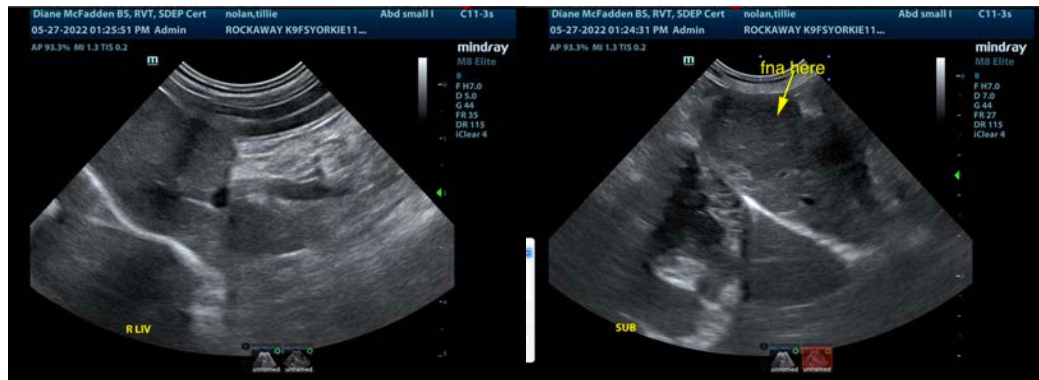

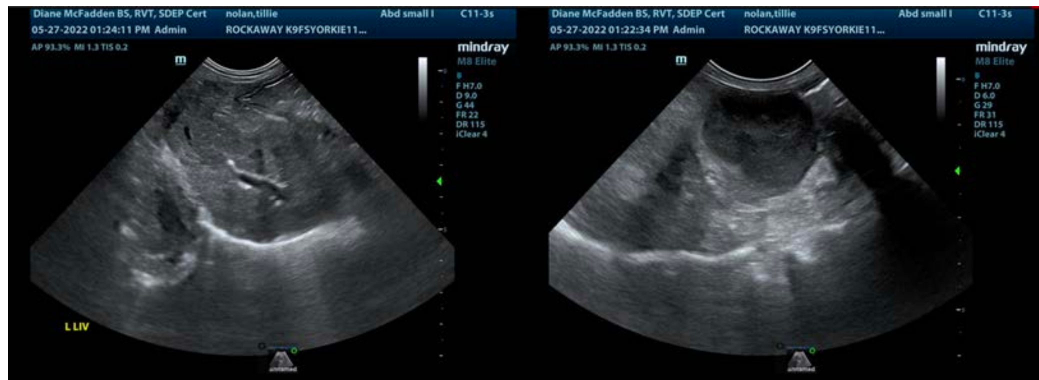

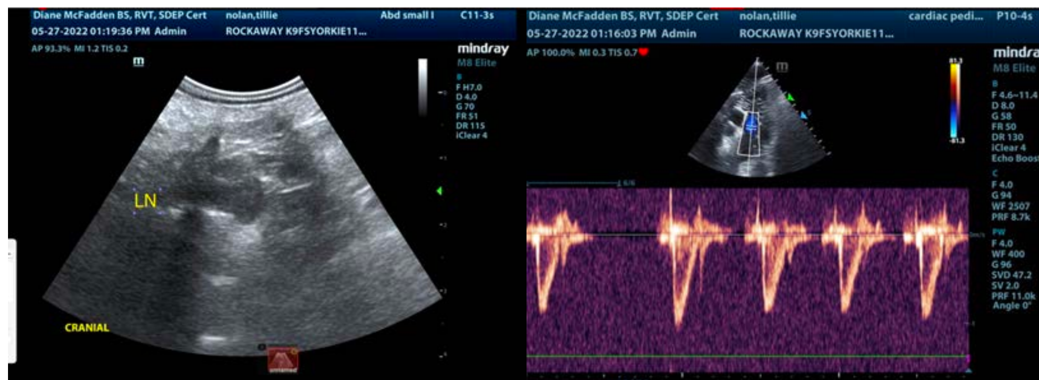

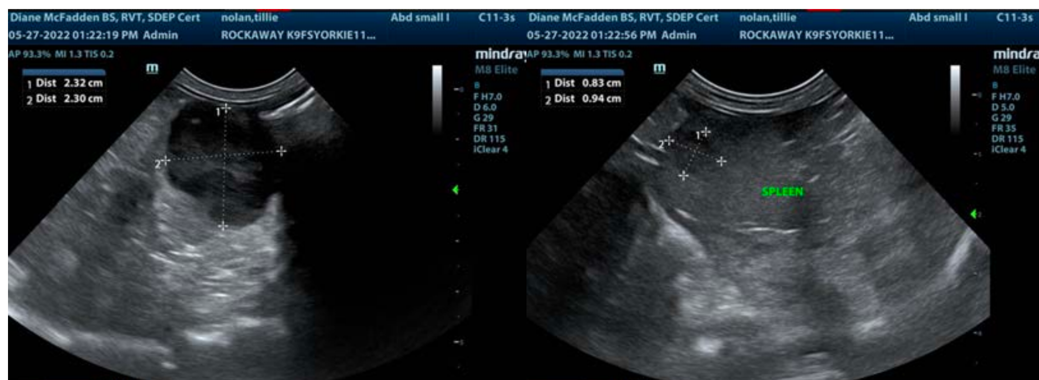

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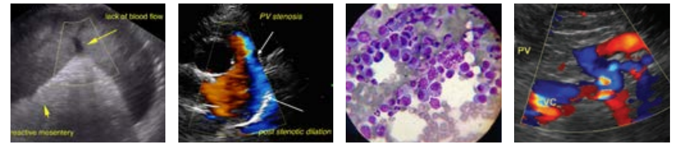

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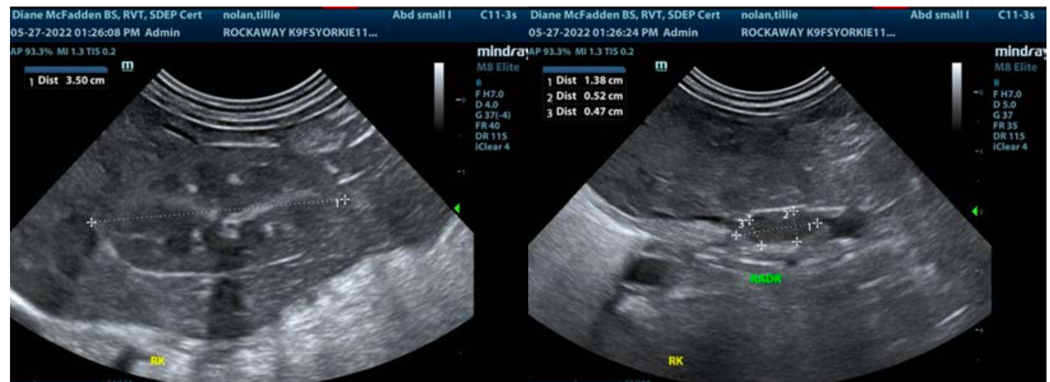

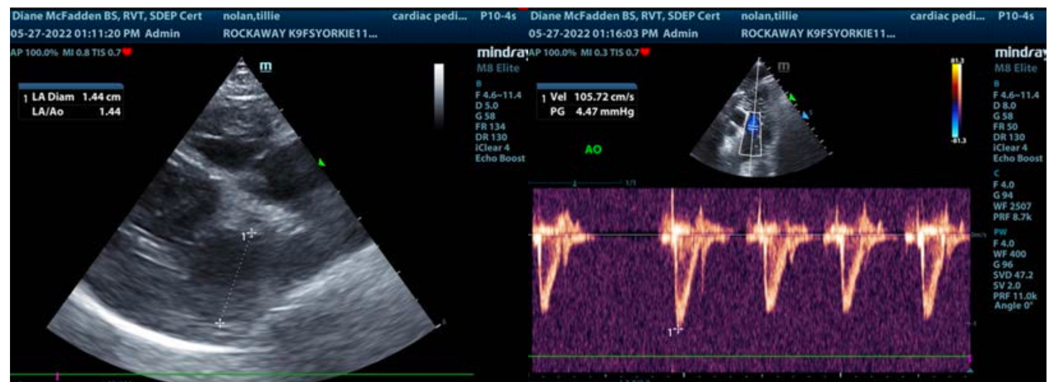

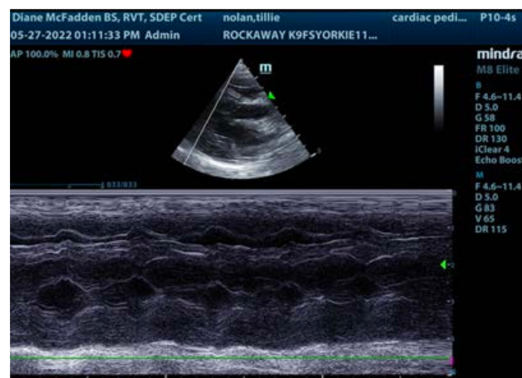

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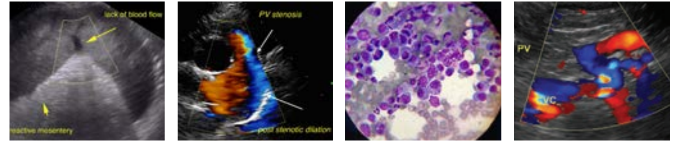

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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