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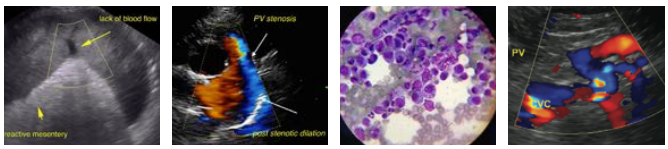

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1-800-838-4268 info@sonopath.com

PATIENT
Kirk Bolla

SPECIES
Feline

BREED
Domestic Shorthair

SEX
Neutered male

AGE
16 years

WEIGHT
9.1 lbs

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Valeryia Shumskaya

HOSPITAL NAME
Northvale VC

REFERRING VET
Dr. Simon

INVOICE
43417

DATE
3/21/23

PRESENTING CLINICAL SIGNS

History: wt loss + decrease in appetite. PD (+ prob PU). Intermittent vomiting. No D/C/S. Increased RR+ HR yesterday Current meds: Methimazole but missing lots of doses recently due to decrease in appetite.
Abnormal PE/Chem/CBC/UA Results: HCT 28.1%, Mild monocytes, SDMA 16, Creat 1.1 (n), BUN 25(n), glob 2.3, ALB 2.6, AST 74, ALP 75, TP 49 UA: 1+ proteins, mild hematuria, pH 5.5, SG 1.014

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The echocardiogram in this patient presented volume overload of the left heart with excessively thickened ventricular septum and free wall. Contractility was subnormal. Mitral insufficiency velocity is > 4.0 m/sec. The right atrium and right ventricle were unremarkable. Trace pericardial effusion were noted with comet tail lung pattern. This is consistent with pulmonary edema.

FELINE CARDIAC PARAMETERS	BODY WEIGHT	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT	9.1 lbs	229	0.85	175	0.84	30	

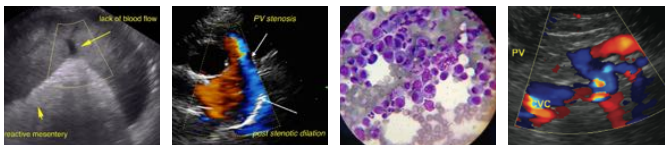
FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Sisson)	LA 2D 4-chamber long axis AS to FW (Sisson) (cm)	LVOT VEL. (m/s)	RVOT VEL. (m/s)	IVRT (m/)
NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7	<1.6	<1.3	40-60
PATIENT	2.0	2.03	2.11	1.6	1.2	NM

Adapted from June Boon,Veterinary Echocardiography,1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** and visible pelvic urethra were unremarkable for the level of repletion presented. The urine, however, did present some mildly echogenic debris consistent with mucous, exfoliated cells from renal or bladder origin, and/or blood clots as these echogenic changes can all present similarly. This is often related to urinary tract infection but may represent simple evidence of exfoliated debris or sterile inflammation. Cystocentesis, urinalysis, +/- culture would be recommended to rule out and define any UTI.



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The **kidneys** presented a relatively uniform cortical hyperechogenicity when compared to the renal medulla, spleen and liver. No overt masses were noted. Corticomedullary definition was nebulous and the ratio favored the cortex slightly. The ureters were not visible and assumed to be normal. These changes are most consistent with chronic interstitial nephritis yet infiltrative disease could not be entirely ruled out without biopsy though neoplasia is not suspected. The right kidney measured 3.14 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 0.36 cm. The left adrenal gland measured 0.41 cm.

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 was noted.

Liver

The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some age-related parenchymal remodeling was noted but likely not clinically significant at this time. The hepatic veins were mildly dilated with slight ascites noted. The gallbladder presented some dependent debris with essentially normal contour. The cystic and common bile ducts were normal. No overt evidence of active inflammatory, infiltrative or regenerative pathology was noted but should be paired with current or past LE elevations regarding any clinical significance to this presentation. The hepatic lymph nodes were unremarkable.

Gastrointestinal

The **gastrointestinal tract** revealed minor variable thickening and echogenic submucosal changes most consistent with low grade end result of chronic GI disease such as IBD and may be related to malassimilation of nutrients if any weight loss is present. No obvious neoplastic patterns were noted and luminal content as unremarkable.

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.

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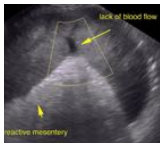
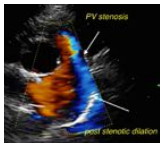
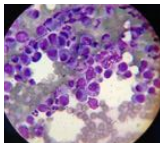
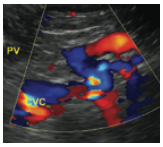

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ULTRASONOGRAPHIC FINDINGS

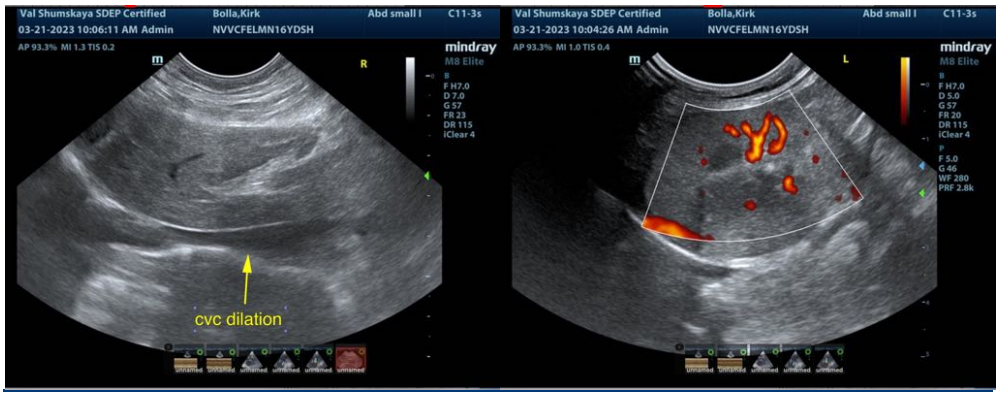
Left sided and emerging right sided heart failure with hypertrophic or restrictive cardiomyopathy phenotype.

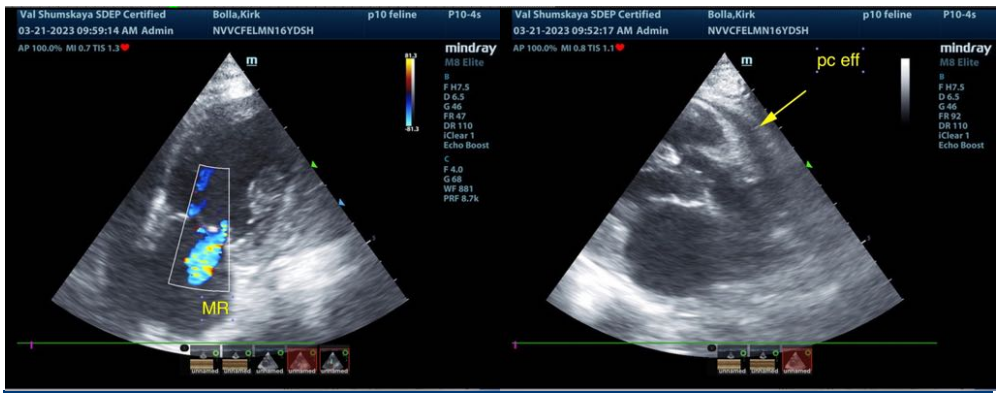
Moderate, chronic interstitial nephrosis pattern.

Non-specific inflammatory hepatopathy.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Reassessment of blood pressure measurement and thyroid assessment is warranted as they may be playing a role in effector organ issues with the heart. I recommend low-dose Lasix therapy at 6.25 mg b.i.d. in this patient. However, I am concerned about renal function. Plavix therapy is indicated. Pimobendan can be justified off label at 0.3 mg/kg b.i.d. Recheck echocardiogram is recommended in 2 weeks. The prognosis is guarded.





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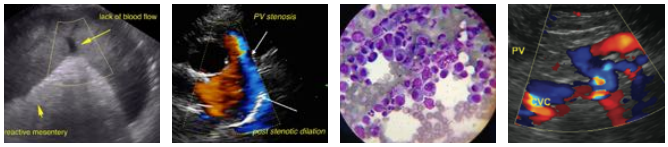

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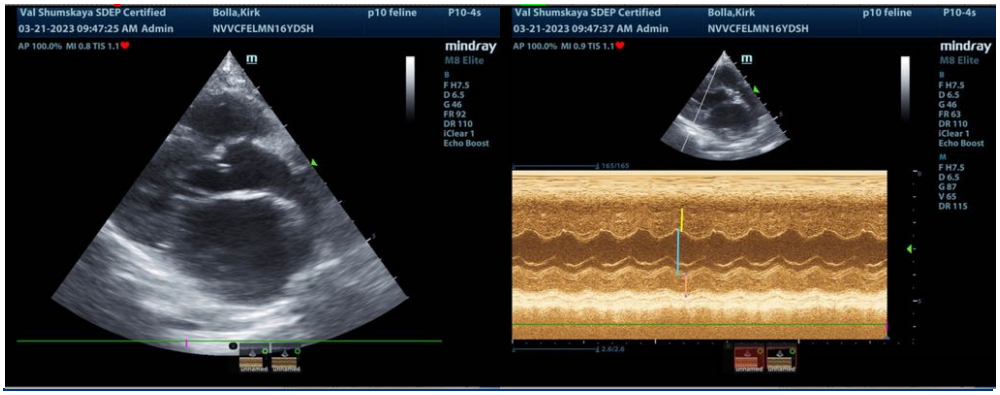

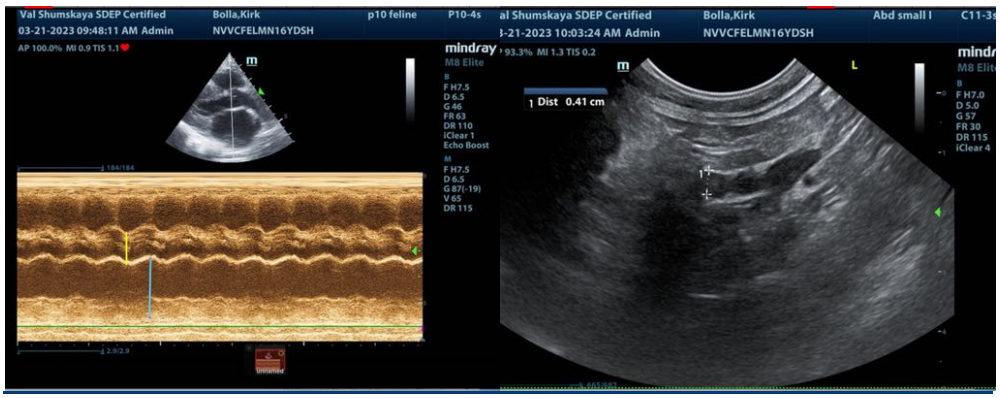

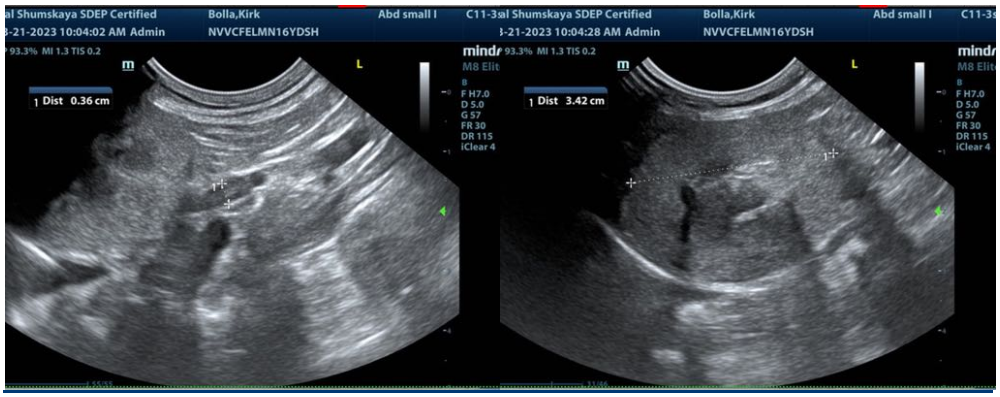

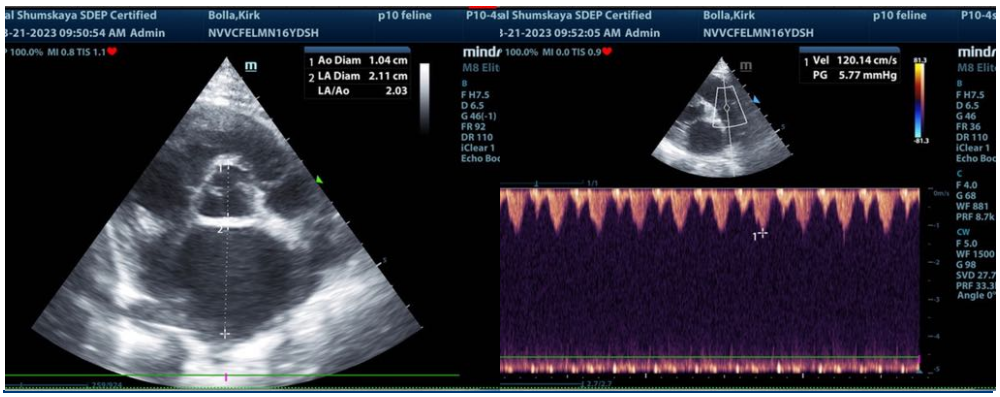

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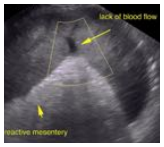
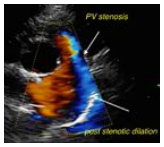
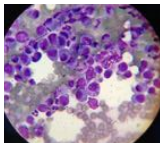
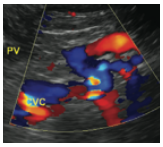

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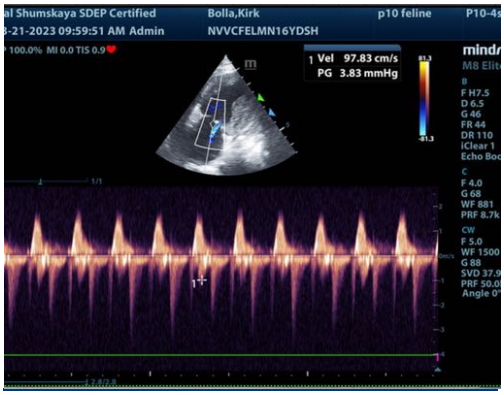

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
info@SonoPath.com