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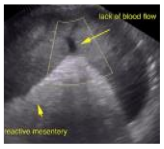
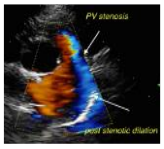
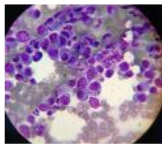
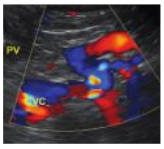

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1-800-838-4268 info@sonopath.com

PATIENT

Tillie Sverkauski

SPECIES

Feline

BREED

DSH

SEX

FS

AGE

14 years

WEIGHT

4.8 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Newton Vet

REFERRING VET

Dr. Chun

INVOICE

13544

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3/24/22

PRESENTING CLINICAL SIGNS

Vomiting, azotemic, weight loss, heart murmur, elevated liver value. Current meds: IVF, Cerenia
Abnormal PE/Chem/CBC/UA Results: BUN 136.5, Crea 10, ALT 438, K+ 2.8. Cysto pending.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

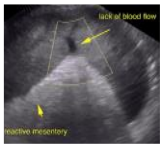
FELINE CARDIAC PARAMETERS	**BODY WEIGHT** (kg)	**HR** (BPM)	**IVSd** (cm)	**LVIDd** (cm)	**LVWd** (cm)	**FS** (%)	**EF** (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		155	0.56	1.0	0.58	49.4	85.1
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**LA/AO HEART BASE** (Sisson)	**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	1.0	1.0	1.0		1.0	0.78	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							

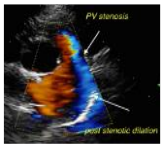
Cardiac Presentation

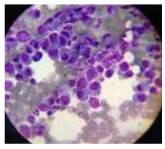
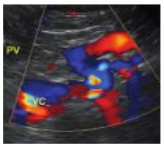
The echocardiogram in this patient demonstrated mild subnormal to volume contracted **left atrial** size based on 3 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics. The **left ventricle** presented borderline increased thicknesses with maintained 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 and angles of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinetics. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted or extra cardiac pathology in the visible planes. 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 2.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or





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sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The area of the aortic trifurcation was free of pathology.

Both kidneys were borderline subnormal in size compared to normal renal size for the species. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and moderate loss of corticomedullary symmetry and definition expected for the age of the patient. Mild bilateral pyelectasia was present. Mild dystrophic medullary mineralization was present in both kidneys. The left kidney measured 3.0 cm in length. The right kidney measured 2.9 cm in length.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.44 cm width. The right adrenal gland exhibited subjective minor prominent size without overt evidence of neoplastic criteria. The right adrenal gland measured 0.59 cm width.

Spleen

The spleen exhibited mild subnormal size with 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. The spleen measured 0.54 cm in width.

Liver/ Gallbladder

The liver was normal in size, and contour exhibiting normal parenchyma echogenicity with a moderate coarse echotexture. The gallbladder was non-distended in size with mild gallbladder debris. The gallbladder was otherwise normal without evidence of gallbladder or peripheral inflammation. The cystic and common bile ducts were normal.

Gastrointestinal

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.

Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The pancreas was normal in size with mild areas of subtle capsule asymmetry and mildly hypoechoic to nonhomogeneous pancreatic parenchyma. No evidence of pancreatic neoplastic criteria was noted.

Free Abdomen

No omental masses, lymphadenopathy or peritoneal effusion were present.

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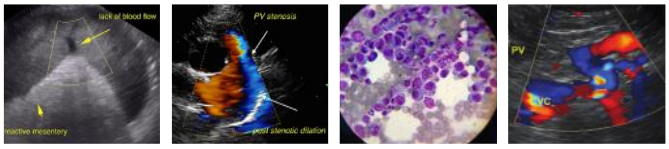

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ULTRASONOGRAPHIC FINDINGS

Primary Findings

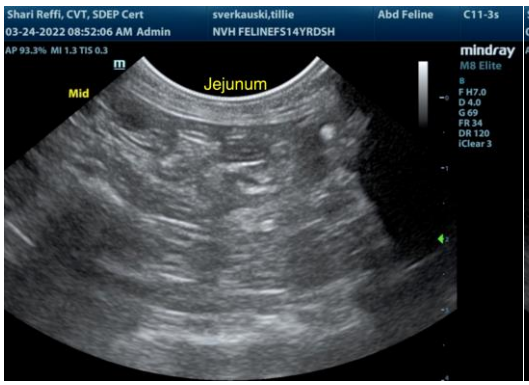
- Overtly normal cardiac structure and function with probable reduced cardiac volume
- Moderate chronic renal changes exhibiting minor dystrophic medullary mineral and mild bilateral pyelectasia
- Sonographically unremarkable gastrointestinal tract
- Mildly hypoechoic to nonhomogeneous pancreas - potential low-grade chronic to chronic active pancreatitis
- Hepatopathy - probable reactive vs. inflammatory hepatopathy subjectively benign

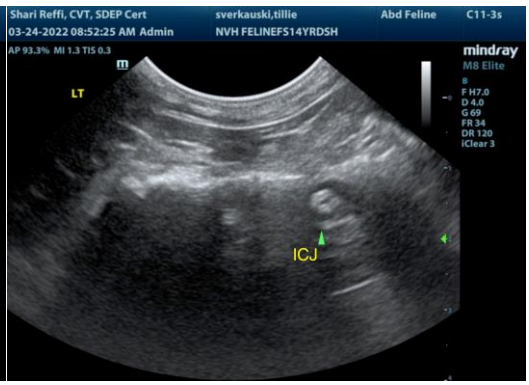
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The renal presentation is most consistent with chronic kidney disease, although potential for acute on chronic renal insult cannot be definitively excluded. The pyelectasia in both kidneys may be owing to chronic renal changes, pelvic scarring, or IV fluid therapy If applicable. Correlation with full urinalysis +/- additional renal staging including urine culture and sensitivity and baseline UPC, and monitoring of systemic blood pressure is recommended.

The murmur in this patient is most likely a physiologic or flow murmur suspected to be secondary to volume changes i.e., dehydration.

A GI panel to include PLI/TLI/Cobalamin/Folate for further assessment of the pancreas, as well as rule out occult concurrent intestinal disease could be considered. Hospitalization with CKD therapy and as-needed gastrointestinal and hepatic support would be reasonable.





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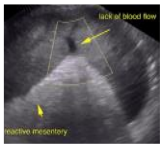
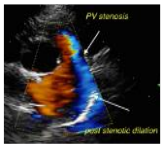
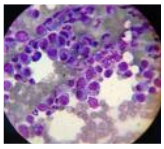
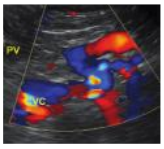

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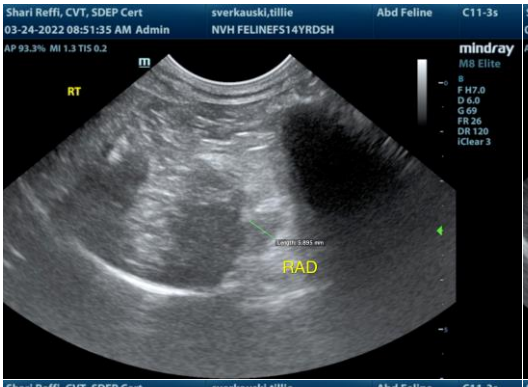

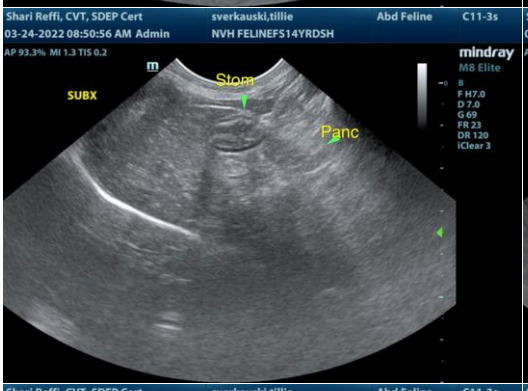

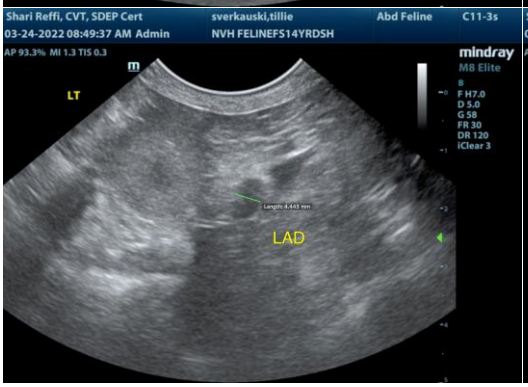

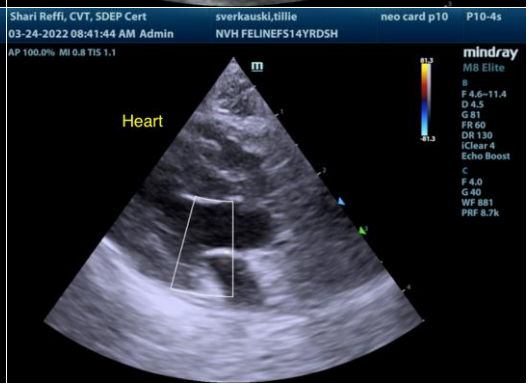

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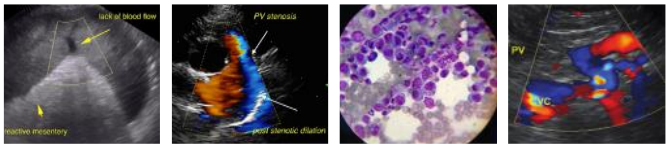

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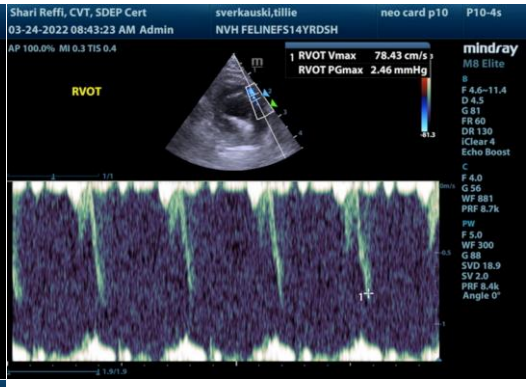

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
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