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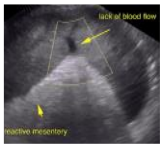

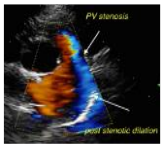

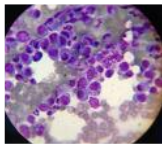
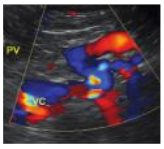

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1-800-838-4268 info@sonopath.com

PATIENT

Sally Smith

SPECIES

Feline

BREED

DSH

SEX

FS

AGE

12 years

WEIGHT

7.1 lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Newton Vet

REFERRING VET

Dr. Kim

INVOICE

17224

DATE

6/30/23

PRESENTING CLINICAL SIGNS

Elevated liver enzymes, vomiting, ravenous appetite, weight loss, new heart murmur.

No current meds. Abnormal PE/Chem/CBC/UA Results: Creat 0.7 (L); Glucose 167 (H); ALT 408 (H); ALP 127 (H); Chl 101 (L); WBC 29.75 (H); Neu 27.3 (H)

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		214	0.42	1.25	0.47	51	86
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	1.6	1.5	1.4		1.1	1.0	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 normal **left atrial** size based on 3 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics. No overt MR was noted on Doppler. The **left ventricle** presented normal 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 and angles of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. Normal measured LVOT velocity was noted. 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). Normal measured RVOT velocity was noted. 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.

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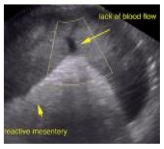

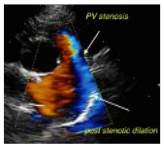

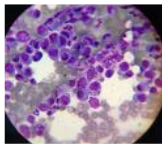
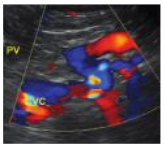

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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild to moderate, non-dependent particulate sediment was present without evidence of calculus formation. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted.

No evidence of pathology in the area of the aortic trifurcation.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 3.8 cm in length. The right kidney measured 3.8 cm in length.

Adrenal Glands

The left and right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.35 cm width. No overt pathology was noted in the area of the right adrenal gland.

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.

Liver/ Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. 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 contained mild, nonshadowing ingesta / chyme without signs of obstruction or foreign material.

The intestinal walls demonstrated intact wall layers with diffusely thickened walls and altered 1:3 muscularis / mucosa ratio primarily consisting of muscularis hypertrophy.

Normal visible colon wall layers were present with semi-formed fecal matter.

Pancreas

The left pancreatic limb was normal in size and contour with minor nonhomogeneous hypoechoic parenchyma with mild pancreatic duct dilation.

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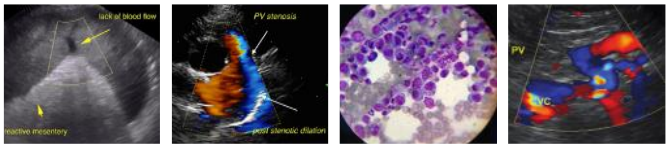

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Free Abdomen

Intermittent, mildly prominent mesenteric lymph nodes were present. The lymph nodes exhibited mild irregular contour yet homogeneous parenchyma without evidence of peripheral inflammation and maintaining a normal width: length ratio (<0.5). No evidence of omental masses or peritoneal effusion.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Normal echocardiogram - probable benign physiologic / flow murmur
- Sonographically unremarkable liver and gallbladder - consistent with benign hepatopathy
- Intact yet thickened small intestinal wall
- Mildly hypoechoic / heterogeneous left pancreas
- Intermittent sonographically benign mesenteric lymph nodes

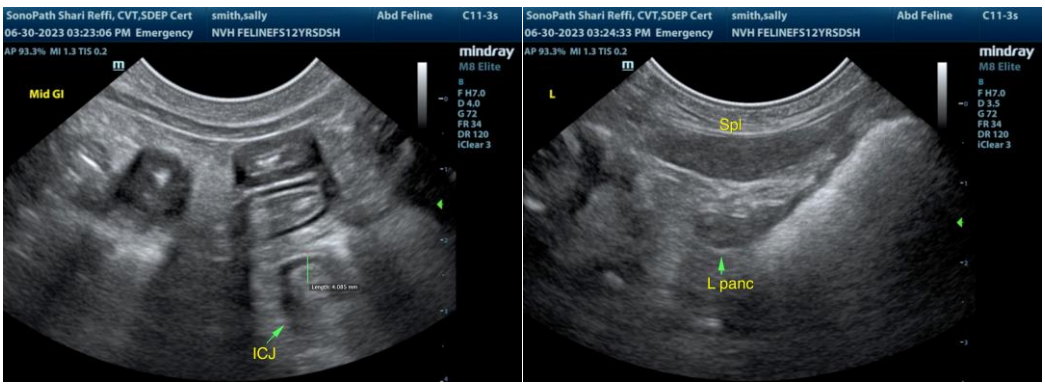
Secondary Findings

- Mild chronic renal changes and urinary bladder sediment

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Normal cardiac structure and function were present without evidence of clinical issues such as HCM, significant valvular insufficiencies, left or right heart chamber enlargement, or clinical pulmonary hypertension. The hemodynamic effects of the murmur appear to be minimal given the lack of cardiac chamber enlargement. There is no indication for cardiac medications. Recheck echocardiogram is suggested in 6-12 months, sooner if clinical signs arise or if murmur intensity increases.

IBD or other chronic inflammatory enteropathy and Triaditis are considered most probable. Potential for neoplastic infiltrative enteropathy with round cells, i.e., lymphoma or similar, cannot be definitively excluded. Definitive diagnosis would require intestinal and ideally hepatopancreatic biopsies for histopathology. Assuming normal clotting status, screening hepatic FNA cytology using a 25-gauge needle could be considered with potential identification of inflammatory cell type. A GI panel to include PLI/TLI/Cobalamin/Folate is recommended. Empirical IBD / Triaditis protocol with as-needed gastrointestinal support and monitoring of clinical response and body weight going forward would be reasonable.



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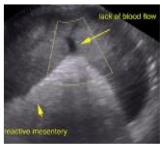

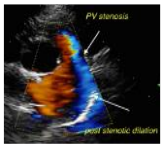

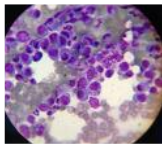
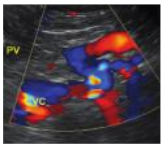

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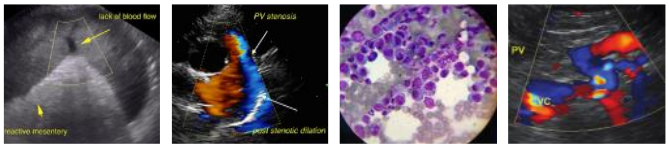

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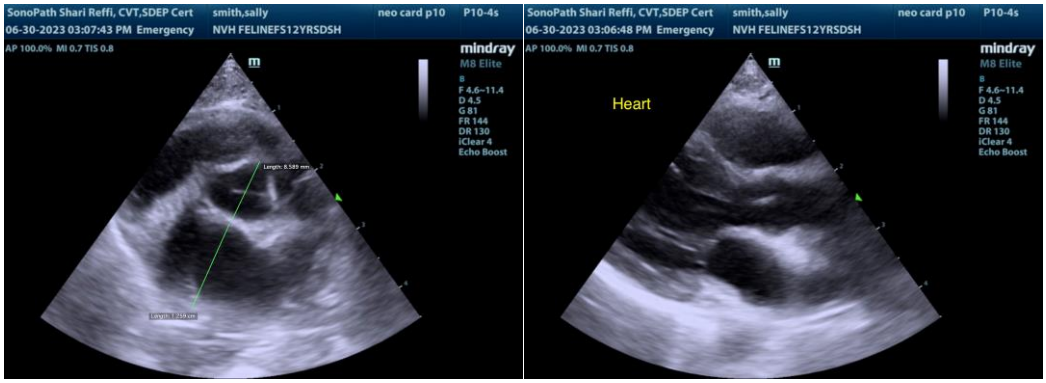

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
info@sonopath.com