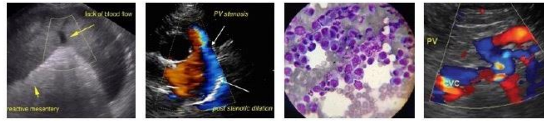


PATIENT

Lilu Nadason-Lliev

SPECIES

Feline

BREED

DSH

SEX

FS

AGE

13 years

WEIGHT

2.31 kg

INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP

IMAGING PERFORMED BY

Kelly Reschny

HOSPITAL NAME

Hamilton Region Veterinary Emergency Clinic

REFERRING VET

Dr. Wattson

INVOICE

17238

DATE

7/14/23

PRESENTING CLINICAL SIGNS

markedly painful abdomen - 48h history of vomiting and diarrhea and anorexia - 1 month history of progressive weight loss - Was seen playing with yarn but did not see any ingestion

Current Medications Cerenia, pantoprazole, methadone, mirtazapine, ampicillin, alfaxalone, butorphanol, dexmedetomidine

Abnormal PE/Chem/CBC/UA Results: Blood Pressure 126/80 MAP 92 HR/RR/BP: 180/30/see above Is there a Heart Murmur? If so, please grade. Grade I-II/VI heart murmur

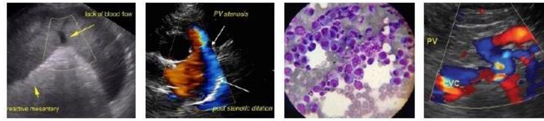
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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		165	0.35	1.54	0.35	60	92
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	1.4	1.5	1.4		0.9	0.6	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. 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. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular



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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. Primarily anechoic urine was present in the lumen. 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.

The area of the aortic trifurcation was free of pathology.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 3.8 cm in length. The right kidney measured 4.0 cm in length.

Adrenal Glands

No overt pathology was noted in the area of the left or right adrenal glands.

Spleen

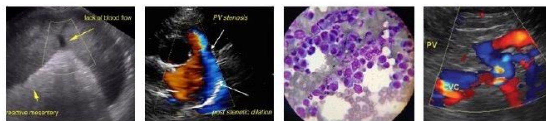
The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted. The spleen measured 0.85 cm width at the level of the hilus.

Liver/ Gallbladder

The liver exhibited subjective mild enlargement with normal 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 containing primarily anechoic content with mild gallbladder sediment. No overt evidence of gallbladder criteria or post hepatic obstruction was noted. The cystic and common bile ducts were normal.

Gastrointestinal

The stomach presented intact subjective mildly prominent wall layering. The stomach contained a moderate amount of retained, primarily anechoic fluid and lumen gas.



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The small intestine presented generalized intact wall layering and overtly maintained normal wall layer ratio with segmental to primarily generalized mild to moderate intestinal ileus containing anechoic fluid and increased segmental gas pattern. Concurrent segments of primarily empty small intestine with lumen gas were also visualized to the level of the ileocolic junction. No overt pathology was noted in the area of the ileocolic junction. The ileocolic wall width measured 0.27 cm.

Overtly normal visible colon wall layers were present with subjective semi-formed fecal matter in the colon.

Pancreas

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

Free Abdomen

Intermittent mesenteric nodes were present. The lymph nodes were mildly prominent, essentially isoechoic to adjacent omentum without evidence of peripheral inflammation and maintaining a normal width: length ratio (<0.5). An example of a lymph node measured 1.5 cm x 0.5 cm. The lymph nodes were not consistent with neoplastic or overt inflammatory criteria. Intermittent, scant pockets of peritoneal free fluid were noted. Generalized mild hyperechoic omentum was present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Normal echocardiogram
- Acute nonspecific gastroenteritis pattern with segmental to primarily generalized gastrointestinal ileus
- Hepatopathy with mild gallbladder sediment - nonspecific, potential for low-grade inflammatory hepatopathy, i.e., cholangiohepatitis
- Scant peritoneal free fluid and generalized reactive omentum

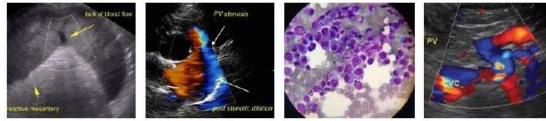
Secondary Findings

- Urinary bladder sediment

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of structural or functional cardiomyopathy, given the current medication protocol. Probable benign physiologic / flow murmur. Regardless, the hemodynamic effects of the murmur appear to be minimal without evidence of left or right heart chamber enlargement. No indication for cardiac medications or anesthetic contraindications.

Considerations for the gastrointestinal ileus pattern may include metabolic / functional vs. partial mechanical obstruction, given the patient's history. The possibility of occult infiltrative gastrointestinal



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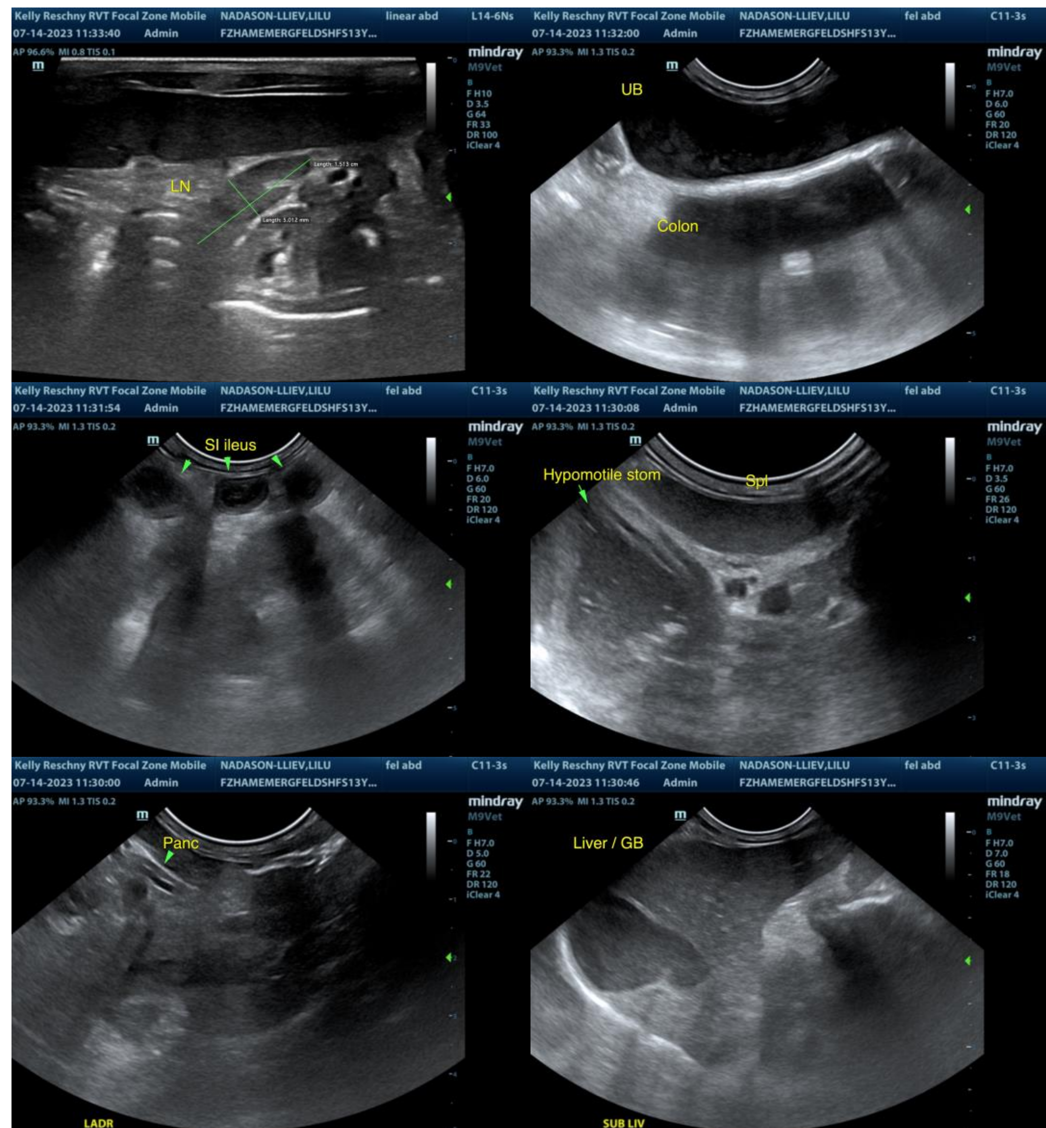
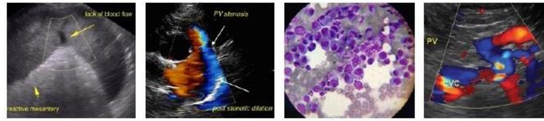
neoplasia cannot be definitively excluded. There was no sonographic evidence of significant active pancreatitis as a contributing factor. Likewise, the potential for emerging septic abdomen, given CBC abnormalities and reported significant abdominal pain, could be possible.

Given this presentation, exploratory laparotomy with gross inspection of the gastrointestinal tract and with gastrointestinal biopsies (considered essential) assuming normal clotting status, is warranted. Hospitalization with IV fluids, gastrointestinal support, analgesia, broad spectrum four-quadrant antibiotic protocol, with recheck sonogram in 24-hours, CBC pathology review, and recheck retroviral status would be a more conservative approach.





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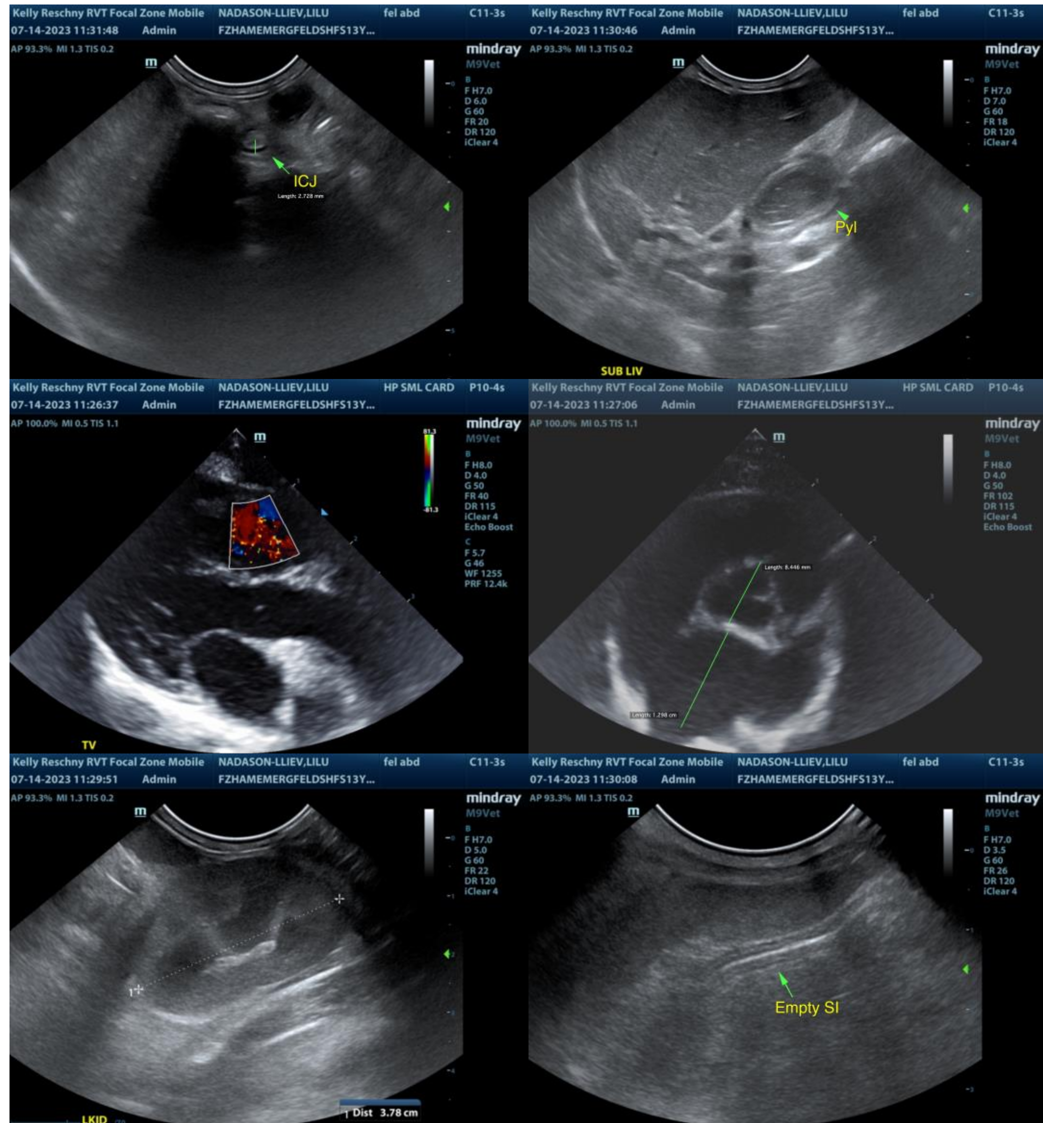

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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