**PATIENT**

Mitten Harms

SPECIES

Feline

BREED

Domestic Shorthair

SEX

Male

AGE

13 weeks

WEIGHT

2.8 lbs

INTERPRETED BYEric Lindquist, DMV
DABVP, Cert. IVUSS**IMAGING
PERFORMED BY**

Rachel Runnells

HOSPITAL NAME

SVS Imaging KC

REFERRING VET

Dr. Oetting

INVOICE

42810

DATE

2/14/23

PRESENTING CLINICAL SIGNS

History: Initially presented for stumbling and o concerned pt is blind. Holding head back or to the side while eating. Acts like he can't see food/treats and o has to guide him to them and seems to use his nose to guide him. Stumbles the worst after waking up from sleeping. Stumbles and falls (o has videos on her phone). Ran into the dresser last night. Never seems stiff or limp. Is "winky" in his LEFT eye occasionally. Finished last tx of otomite on Sunday. Yesterday slept all day long and then slept all night. Report that Mittens got really sick and almost died about 2 days after first visit, but we were not contacted. Report that Mittens head pressed the wall for 3 hrs after his first round of vaccines, but we were not contacted. Had been feeding dry kitten food, but Mittens preferred the canned food that the previous o had sent along so o had been feeding canned food. Could not find any kitten canned food so has been feeding adult canned food, but is eating well. Sometimes climbs their legs, but other times acts as he does in the video. Sometimes better after eating, sometimes no improvement.

Abnormal PE/Chem/CBC/UA Results: IDEXX fecal antigen profile: Negative for parasites and ova
IDEXX Bile Acids+Ammonia: Ammonia-286.6, Pre Bile acids-34.2, Post Bile acids-75.7
In house chemistry: BUN-12, AMYL-316, Na-149, Cl-109
Fever of Unknown origin: All negative

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**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 was noted. Ureteral papillae were normal.

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The left kidney measured 3.02 cm. The right kidney measured 3.03 cm.

Adrenal Glands

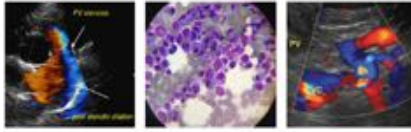
Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 0.29 cm. The left adrenal measured 0.33 cm.

Spleen

The **spleen** presented subtle micronodular changes. This is consistent with reactive spleen or splenitis. If any weight loss is an issue then FNA is indicated. Physiologic free fluid is noted.

Liver

The **liver** is fairly normal in size. The intrahepatic vascularity appeared normal. The portal vein at the portal hilus measured 0.3 cm. A dorsally directed aberrant vessel appeared to be present. This is

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consistent with extrahepatic portosystemic shunt measuring 0.4 cm. The vena cava and aortic ratio was normal at 1:1. The aberrant vessel appeared to be entering through the aortic hiatus adjacent to the esophageal inlet and created a double aorta sign. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal.

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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.

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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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ULTRASONOGRAPHIC FINDINGS**WEIGHT**

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Suspect splenozygos shunt. Extrahepatic shunt to be confirmed on CT.

Splenic nodular changes, likely hyperplasia or splenitis.

INTERPRETED BYEric Lindquist, DMV
DABVP, Cert. IVUSS**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

In the meantime elevated bile acids can be managed with the following protocol. I strongly recommend CT evaluation to confirm suspicion of portosystemic shunting in this patient. Cats can have normal liver size with the presence of portosystemic shunting. Medical management is warranted until confirmation. Given the history of fever, underlying splenitis may also be playing a role. FNA, cytology and culture are indicated.

IMAGING PERFORMED BY

Rachel Runnells

Hepatic Support for Bile Acid Elevation +/- Hepatic Encephalopathy**HOSPITAL NAME**

SVS Imaging KC

Royal Canin Hepatic Support diet or Hills L/D, Metronidazole (7.5 mg/kg PO bid) over the next 14 days, **Lactulose** (Oral: 3.1-3.7 g/5 ml lactulose in a syrup base) long term to target 2-3 soft stools/day, with a **high-quality protein supplement** of minor amount of **yogurt or cheddar cheese**. Monitor bile acids, with attention paid to dropping albumin, BUN or cholesterol. SAME and nutraceuticals as needed. **Ursodiol** (10-15 mg/kg p.o. q24h) can be considered as hepatoprotectant and to enhance bile flow. **Zinc** serum level keep between 200–500 ug/dl. If deficient then Tx zinc acetate 1-3 mg/kg/day. Gastrointestinal protectants are recommended if the patient is anorexic.

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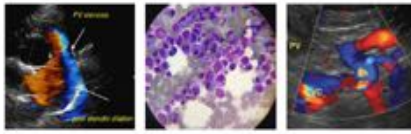
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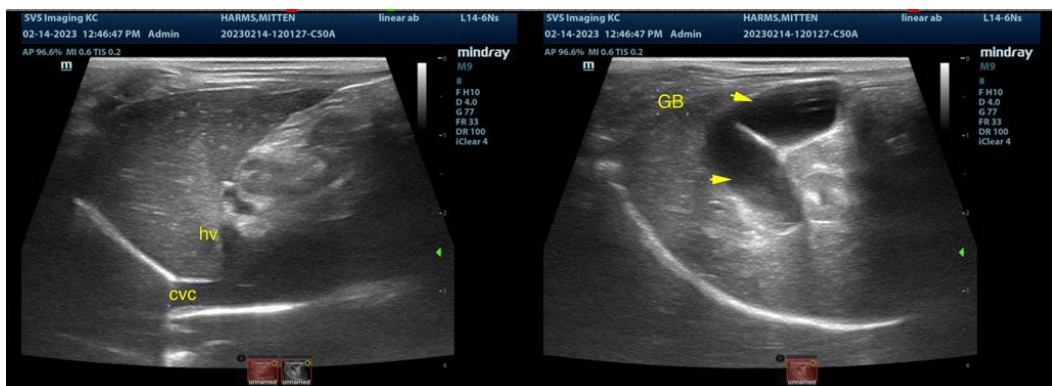
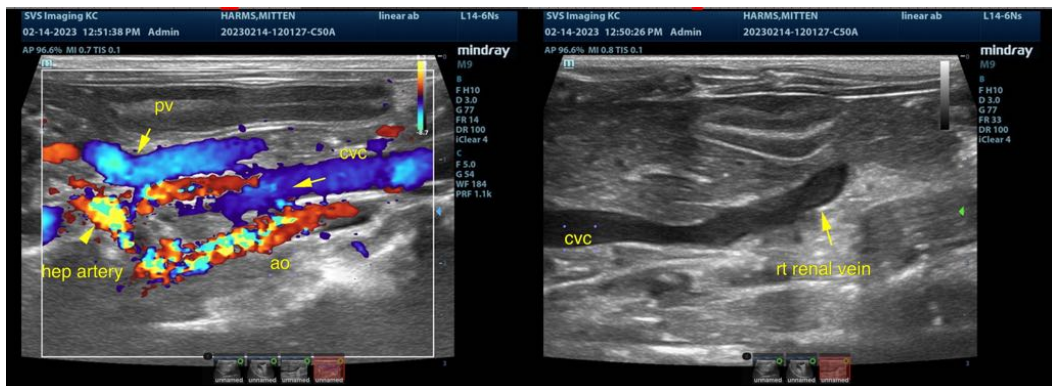
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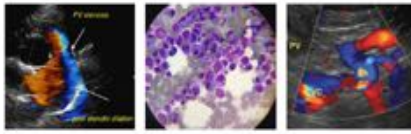
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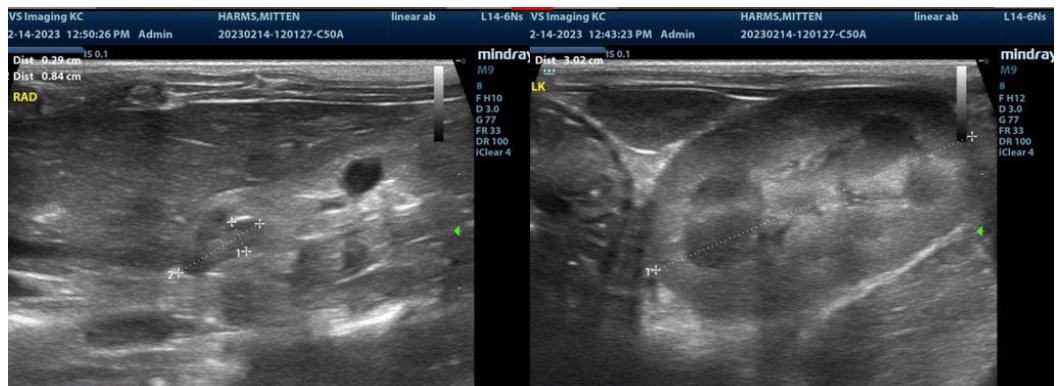
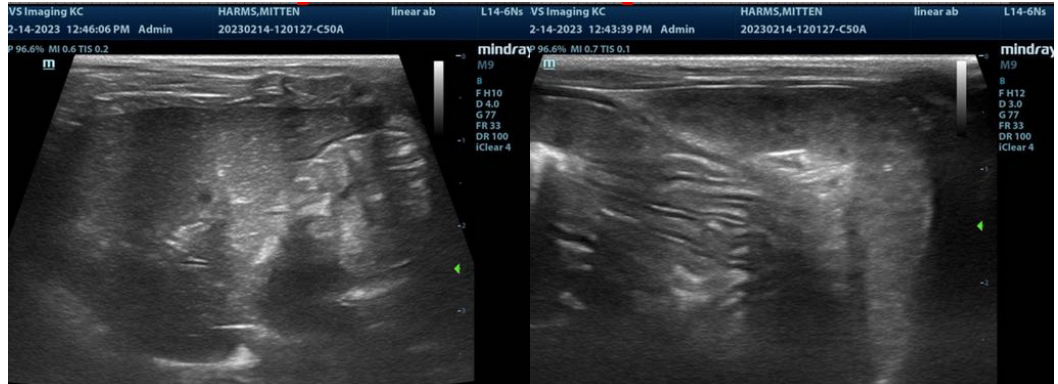
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
Eric.Lindquist@SonoPath.com