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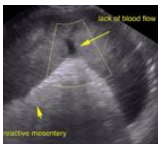

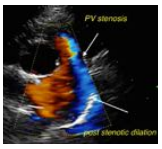

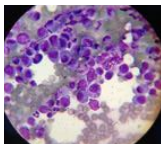
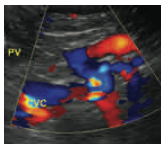

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1-800-838-4268 info@sonopath.com

PATIENT

Uno Mutts

SPECIES

Canine

BREED

German Shepherd

SEX

Intact male

AGE

3 ½ months

WEIGHT

8.4 kg

INTERPRETED BY

Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Heidi Putnam

HOSPITAL NAME

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PRESENTING CLINICAL SIGNS

Possible ataxia noted at home, single elevated bile acids at rDVM (98), unclear if pre or post sample. Referred to our IM service for PSS. Chronic diarrhea as well. Ultrasound showed IHPSS with bilateral renomegaly and cystoliths (suspect urate given history). Began medical management for IHPSS, referred for coil embolization

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. A trace amount of sand and suspended debris was noted. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

The **kidneys** were swollen, which is typical for altered urate metabolism. Mineralization was noted in both kidneys. There was loss of corticomedullary definition. The left kidney measured 6.47 cm. The right kidney measured 6.69 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 0.54 cm at the cranial pole and 0.31 cm at the caudal pole.

Spleen

The **spleen** presented subtle micronduolar changes. This is consistent with hyperplasia or possible splenitis.

Liver

The **liver** was mildly subnormal in size and hypovascular. The residual portal vein was followed to left branch of the portal vein. The extrahepatic portosystemic shunt measured approximately 1.0 cm at maximal diameter. It appeared to deviate prior to entry into the liver and decoursed dorsally for approximately 2.5 cm and entered into the vena cava. The portal vein just prior to the left branch of the portal vein measured 0.55 cm. The vena cava measured 1.1 cm and aorta measured 0.9 cm. The gallbladder and common bile duct were unremarkable. The common bile duct is normal and measured 0.25 cm. No pathological hepatic lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.

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. Soft stool was noted in the colon. The mesenteric lymph nodes are reactive and measured up to 0.86 cm.

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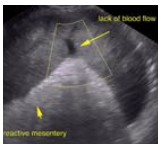
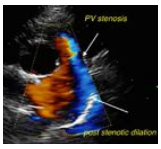
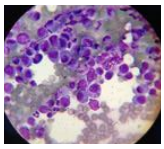
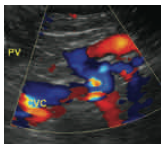

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Pancreas

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.

Free Abdomen

Trace amounts of free fluid were noted in the abdomen.

ULTRASONOGRAPHIC FINDINGS

Extrahepatic portosystemic shunt pattern. Suggestive of splenocaval shunt.

Swollen kidneys with minor mineralization.

Bladder sand.

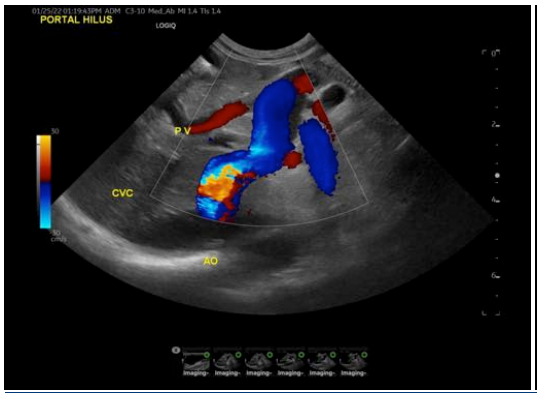
Microhepatica.

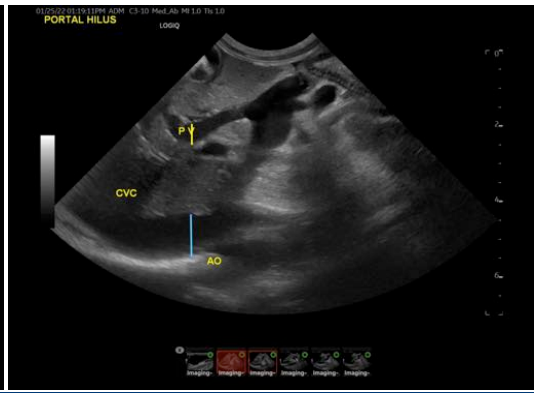
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

CT with contrast is recommended for further definition and confirmation. Medical management with the following protocol is recommended until surgical intervention can occur.

Hepatic Support for Bile Acid Elevation +/- Hepatic Encephalopathy

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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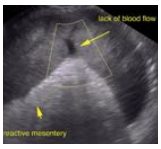
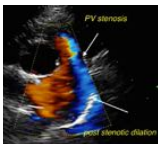
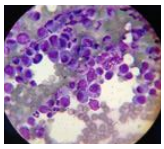
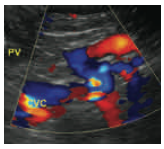

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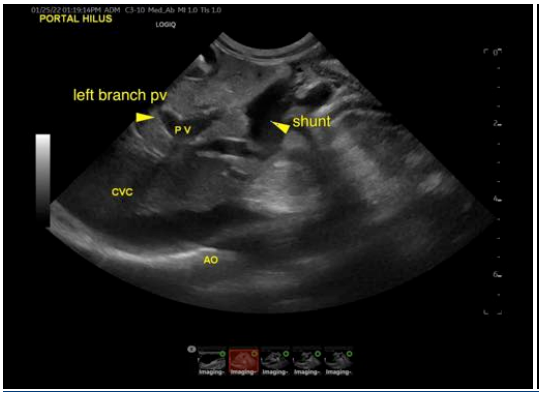

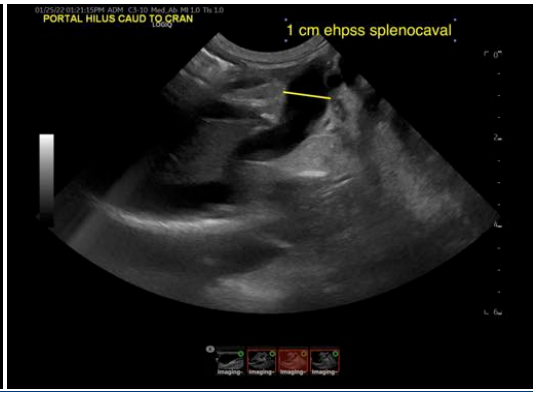

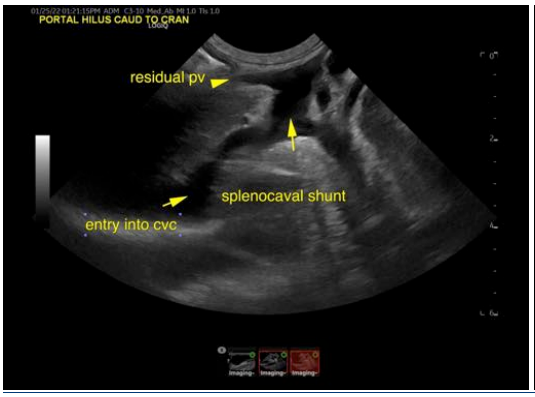

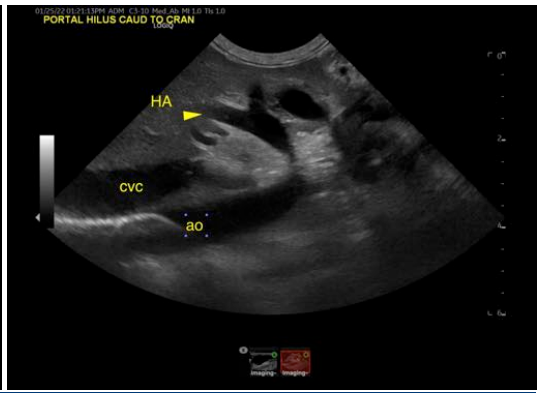

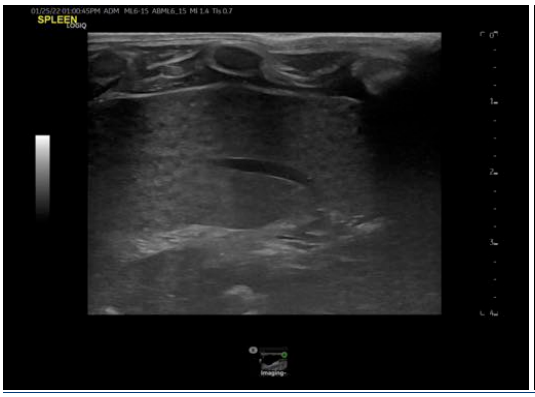

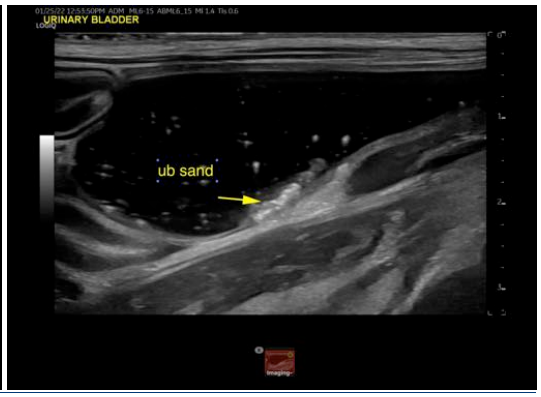

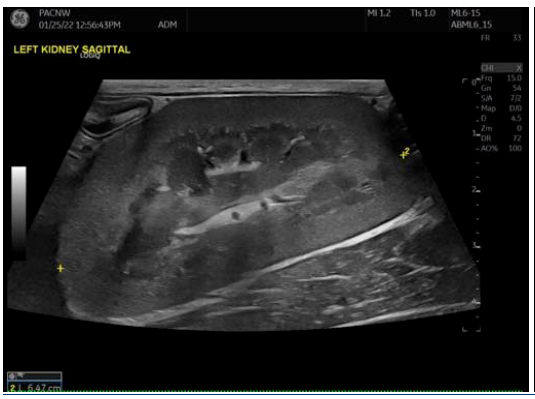

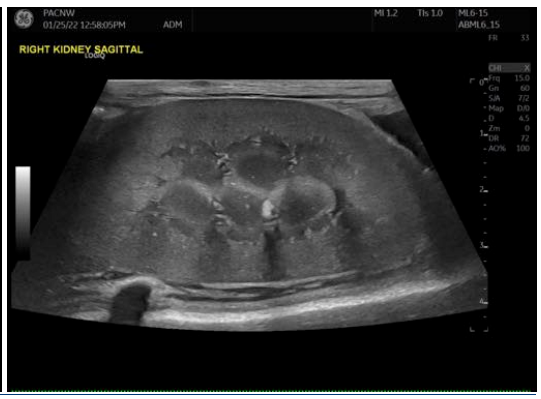

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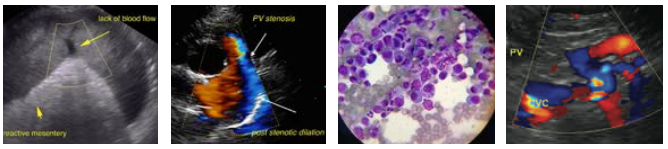

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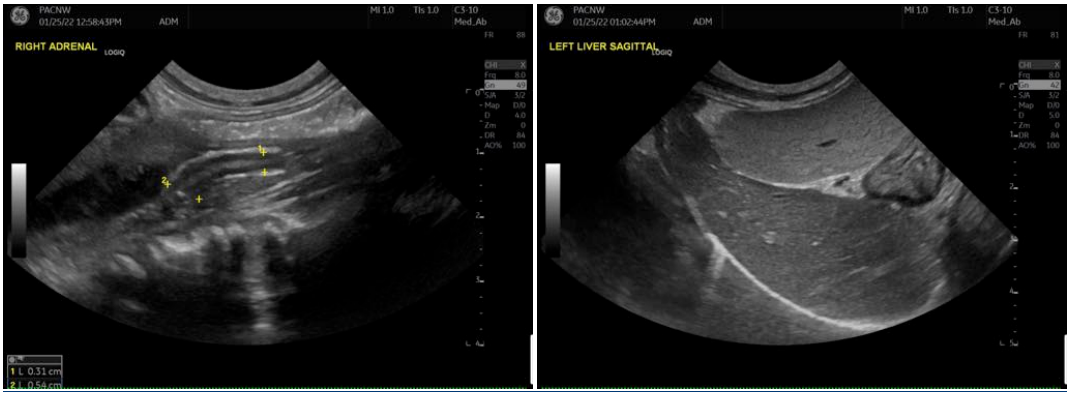

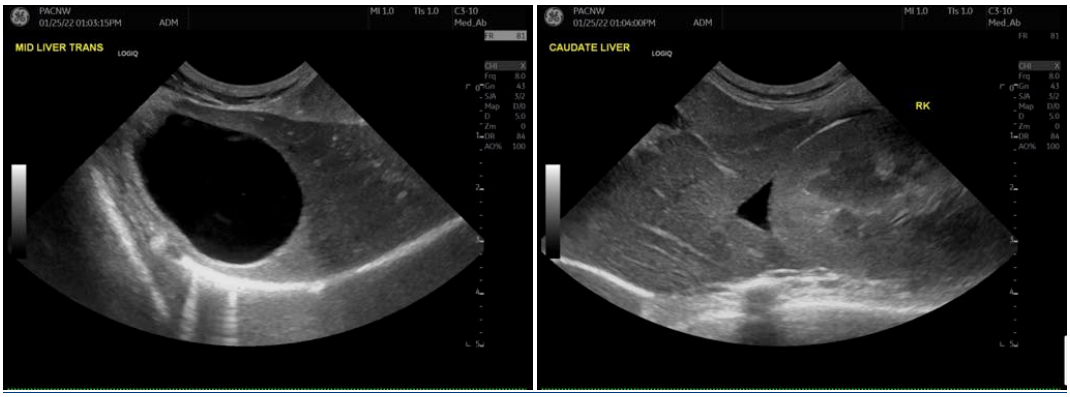

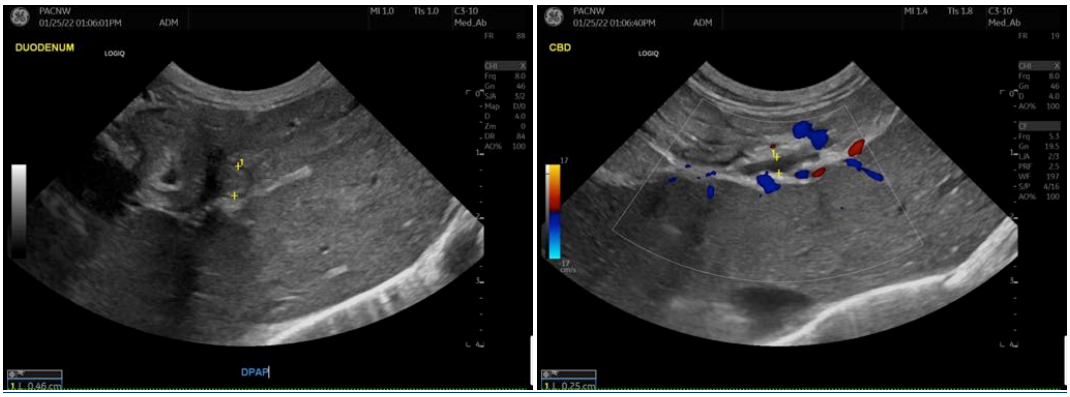

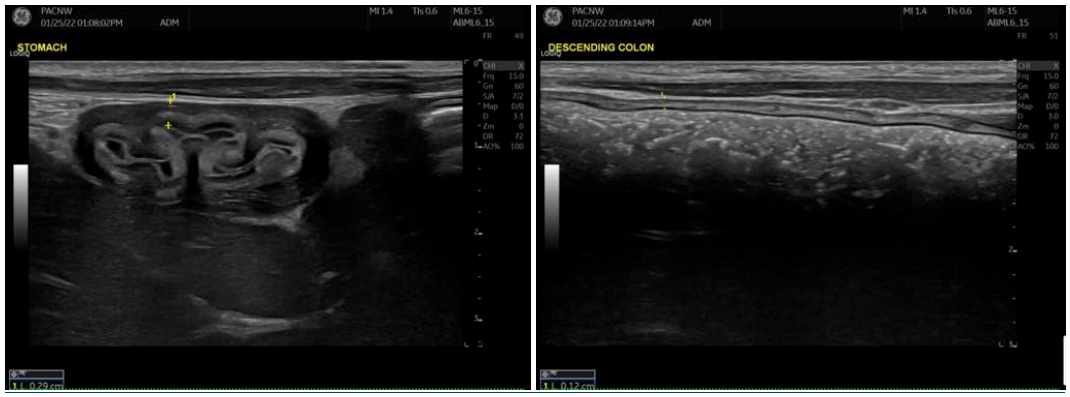

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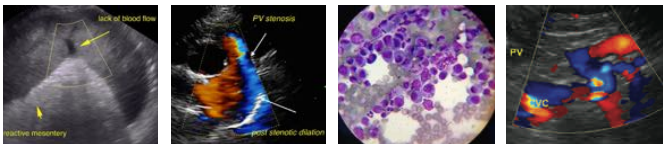

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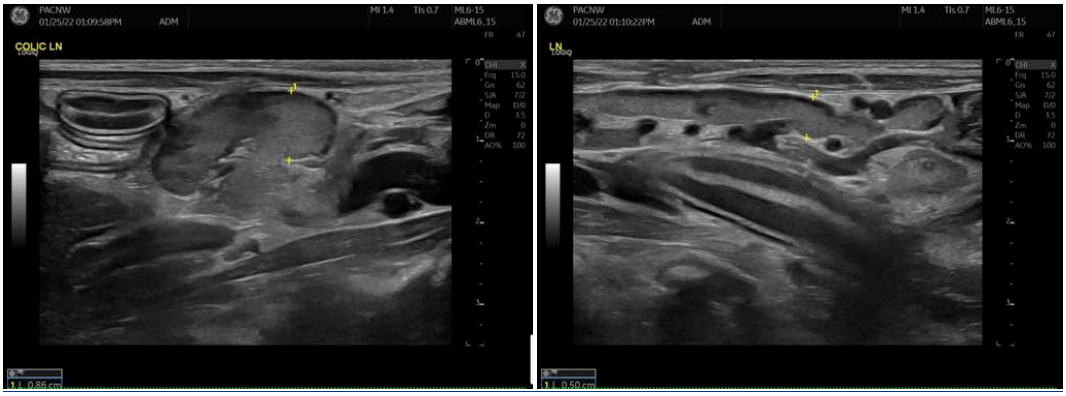

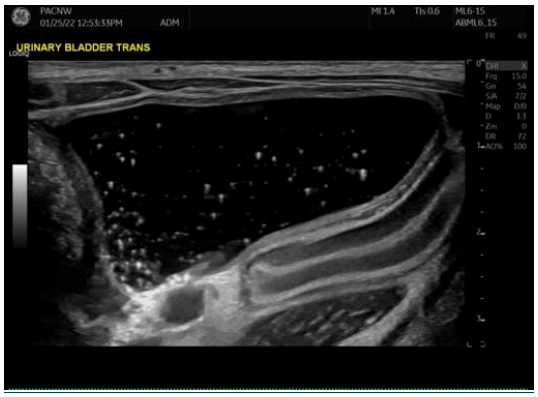

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
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