

PATIENT

Phoebe Kahn

SPECIES

Canine

BREED

Shih Tzu Mix

SEX

Spayed female

AGE

3/21

WEIGHT

15.14 lbs

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Denise Bruno, LVT,
RDMS

HOSPITAL NAME

Farview Animal Clinic

REFERRING VET

Dr. Mosaad

INVOICE

32546

DATE

8/25/22

RESENTING CLINICAL SIGNS

History: Elevated liver enzymes suspect hepatitis or PSS/congenital disease. Labs and Radiographs attached. AST 409, ALT 717, BUN 5, WBC 21000. Bile acids pre 256, post > 420.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** presented a mild amount of sand accumulation with slight micropolypoid changes.

The **kidneys** were both mildly swollen. The right kidney measured 6.0 cm. The left kidney revealed slight pyelectasia that measured 0.21 cm. The left kidney measured 5.59 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 1.67 x 0.5 cm at the caudal pole and 0.38 cm at the cranial pole. The left adrenal gland measured 1.83 x 0.44 cm at the caudal pole and 0.37 cm at the cranial pole.

Spleen

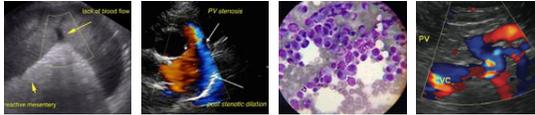
The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

Liver

The **liver** was subnormal in size with slightly increased portal markings. The portal vein appeared to be somewhat enlarged as it approached the portal hilus. The vena cava was normal in size and measured 0.42 cm. The portal vein forward flow was 20 cm/sec, which is normal. The gallbladder and common bile duct were unremarkable.

Gastrointestinal

There was some residual chyme and gas was noted in the **stomach**, yet not pathological. This is consistent with end post prandial presentation. Transit of chyme into the small intestine was normal. Curvilinear patterns were maintained throughout the GI tract. No evidence of pathology. 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

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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

BREED

Microhepatica. Intrahepatic vascularity was subjectively subnormal.

Shih Tzu Mix

Bladder sand.

Mildly swollen kidneys.

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Spayed female

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No intrahepatic shunts were noted. Extrahepatic shunts are largely ruled out; however, I cannot rule out the potential extrahepatic portosystemic shunting as ingesta in the stomach was obscuring the termination of the portal vein and portal vein branching. Given the severe elevation of bile acids I suspect portosystemic shunt presence or severe portal hypoplasia. CT with contrast is indicated in this patient. Moreover, the swollen kidneys, microhepatica and bladder sand are all positive predictive factors for portosystemic shunting according to our study. Therefore, further imaging is necessary.

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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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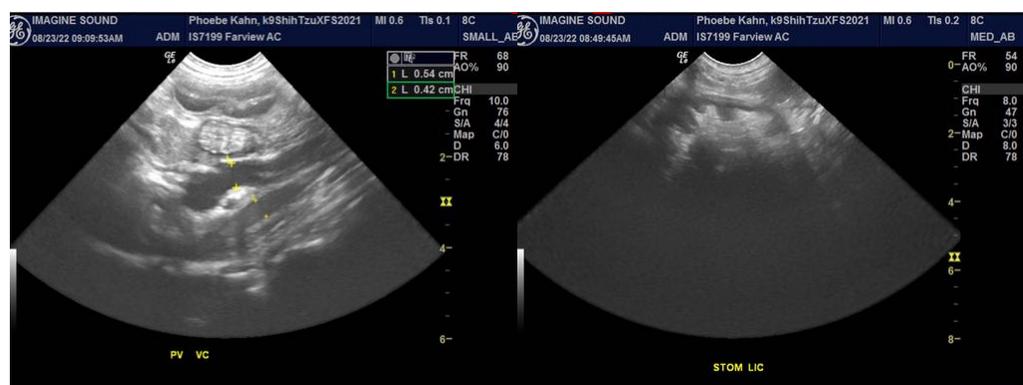
Dr. Mosaad

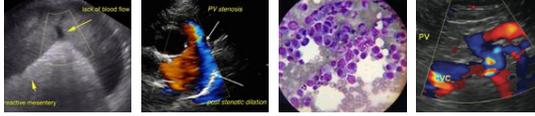
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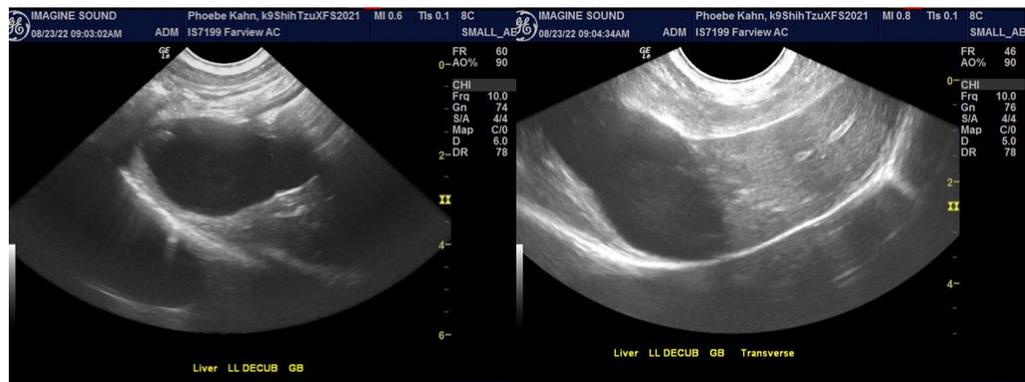
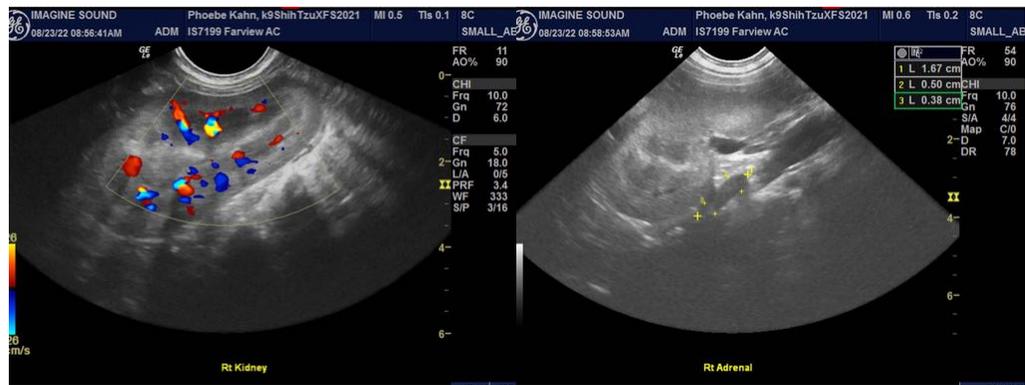
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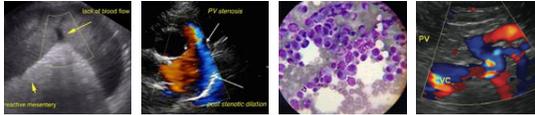
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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.

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Eric.Lindquist@SonoPath.com

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