

**PATIENT**

Livvee McFee

**SPECIES**

Canine

**BREED**

Shih Tzu Mix

**SEX**

Spayed female

**AGE**

5 years

**WEIGHT**

20 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
 DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Kathleen Byrnes

**HOSPITAL NAME**

Byrnes Veterinary  
 Relief Services PC

**REFERRING VET**

Dr. Henry

**INVOICE**

69939

**DATE**

1/7/26

**PRESENTING CLINICAL SIGNS**

History: EL SHUNT HUNT P presented for US due to elevated ALT and Bile Acids. P has torn CCL and ALT found during pre surgery workup. surgery on hold until ALT and bile Acids worked up.  
 Abnormal PE/Chem/CBC/UA Results: 12/23/25 ALT 498 12/26/25 Bile Acids Pre 102, Post 42.3 (fasted but sample very lipemic) ALT 213 1/5/25 Repeat Bile Acids Fasted Sample No lipemia NORMAL

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The pelvic urethra was imaged 2.0 cm beyond the cystourethral junction and appeared normal. 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 were 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 right kidney measured 4.37 cm. The left kidney measured 4.3 cm. Blood flow to the kidneys appeared to be adequate on color flow assessment.

**Adrenal Glands**

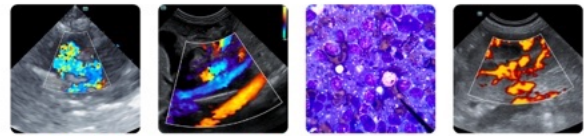
Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 1.5 x 0.47 cm at the caudal pole and 0.51 cm at the cranial pole. The left adrenal gland measured 2.23 x 0.51 cm at the caudal pole and 0.58 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 were noted.

**Liver**

The **liver** was slightly subnormal in size with normal vascularity and uniform parenchyma. The portal vein measured 0.5 cm, vena cava measured 0.53 cm, aorta 0.57 cm. Portal vein branching was normal. There is no evidence of portosystemic shunting. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic



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lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.

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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**

- No evidence of portosystemic shunting. Some form of microvascular dysplasia/portal hypoplasia is possible.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Portal hypoplasia or other cause of bile acid elevation is suspected. Screening FNA for any inflammatory cell type can be considered. Liver biopsy would be necessary for further definition of any parenchymal disease, yet subjectively this appears benign. Leptospirosis titers are indicated given the ALT elevations.

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

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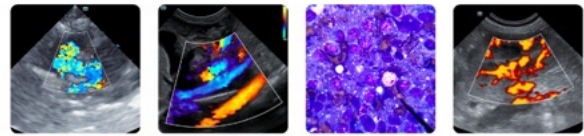
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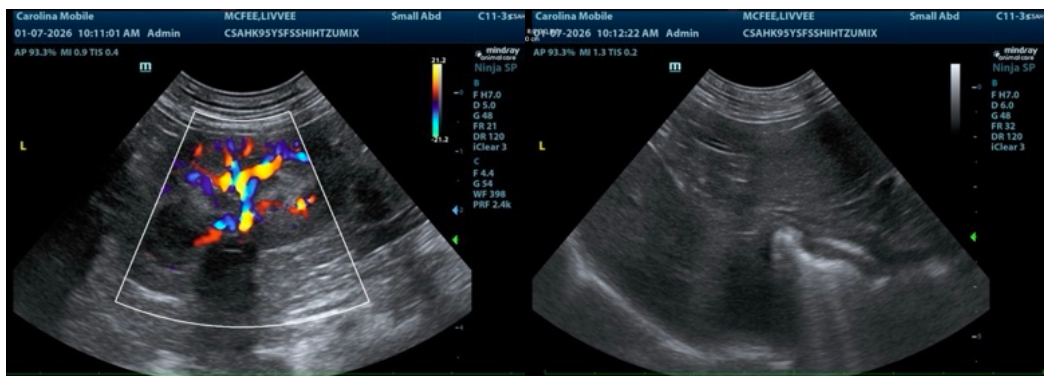
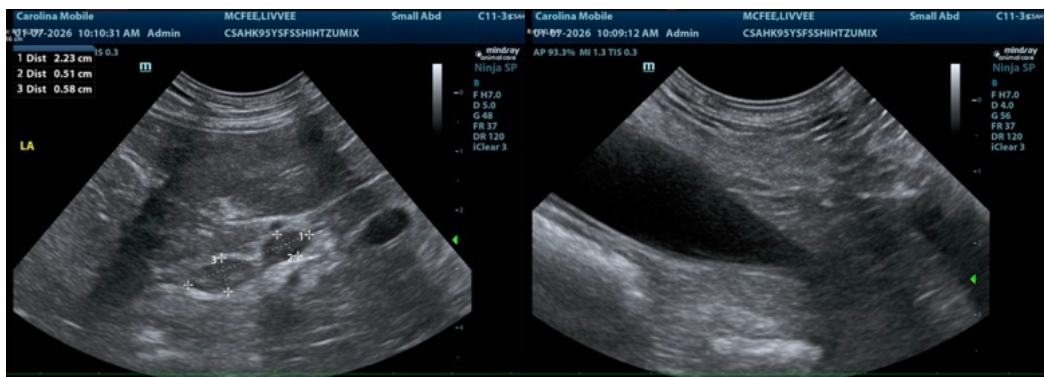
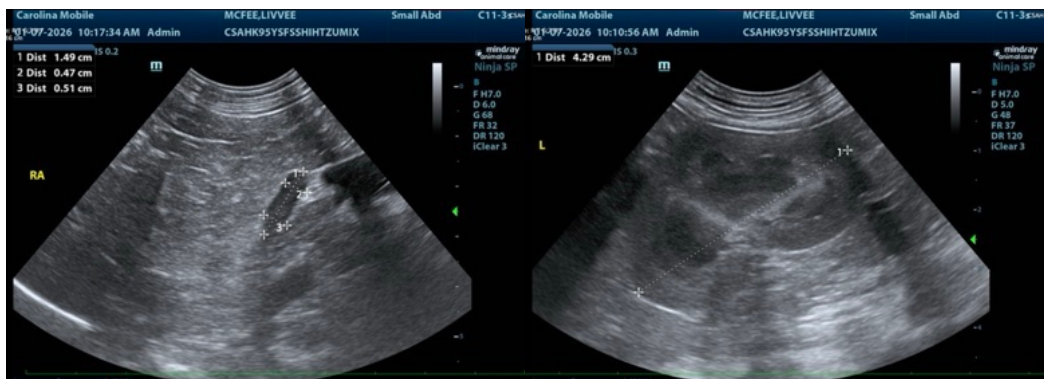
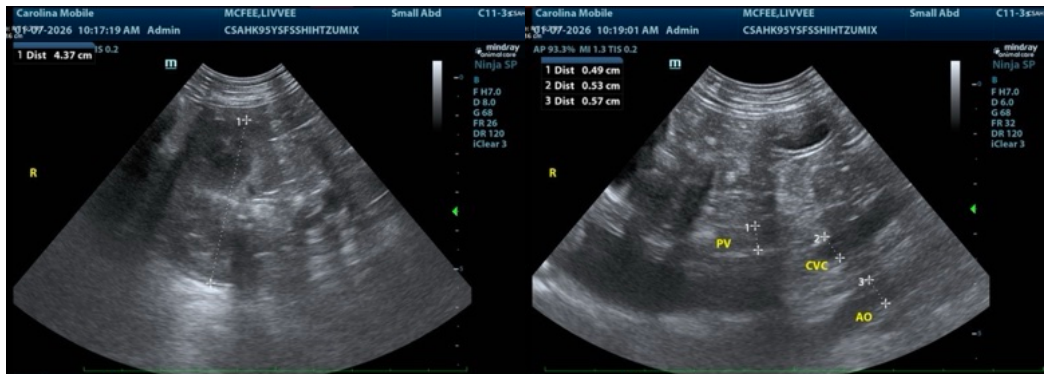
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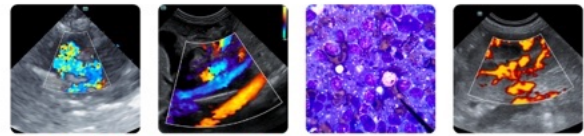
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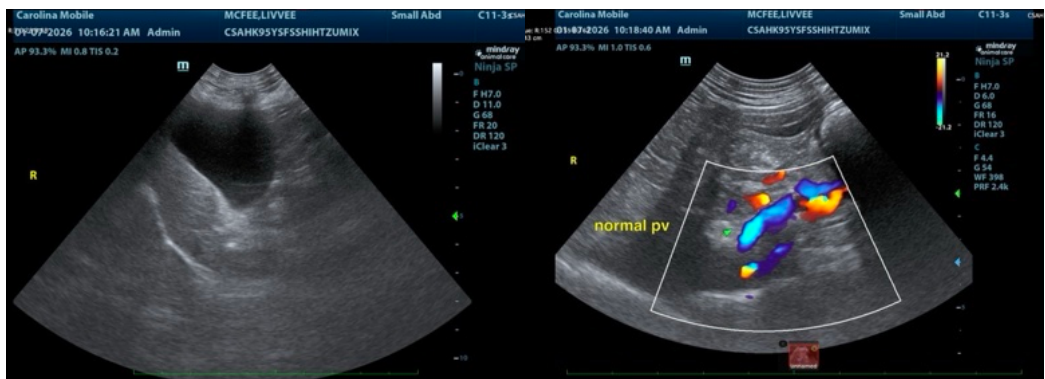
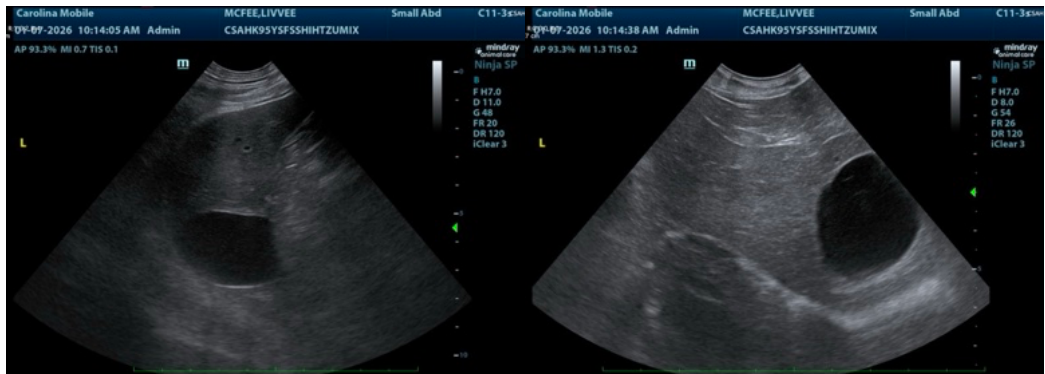
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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**

[info@SonoPath.com](mailto:info@SonoPath.com)