



**PATIENT**

Roxie Kral

**SPECIES**

Canine

**BREED**

Shih Tzu

**SEX**

Spayed Female

**AGE**

4 Years

**WEIGHT**

11 Pounds

**INTERPRETED BY**

Eric Lindquist, DMV

DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Shari Reffi, CVT

**HOSPITAL NAME**

Millburn Vet Hospital

**REFERRING VET**

Dr. Turowsky

**INVOICE**

38152

**DATE**

6/1/22

**PRESENTING CLINICAL SIGNS**

Abnormal bile acids, P having full body trembling episodes (not associated with meals, no ataxia, not losing consciousness) No current meds.

Abnormal PE/Chem/CBC/UA Results: Pre bile acids 30.6; Post 43.8, Chol 381. ALT 52 (121 H); AST 25 (55 H); ALP 24 (160 H); GGT 4 (13 H)

**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 were noted. Ureteral papillae were normal. The pelvic urethra was imaged 2.0 cm beyond the cystourethral junction.

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 3.29 cm. The right kidney measured 3.1 cm with slight pinpoint mineralization noted, non-obstructive.

**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 left adrenal gland measured 1.36 cm x 0.33 cm at the cranial pole and 0.34 cm at the caudal pole. The right adrenal gland measured 1.42 cm x 0.62 cm at the cranial pole and 0.40 cm at the caudal 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 uniform parenchyma. The gallbladder was unremarkable. Portal vena to vena cava ratio was 1:1. No evidence of macroscopic shunting. Portal vein measured 0.40 cm, vena cava measured 0.40 cm.

**Gastrointestinal**

Some stasis was noted in the **stomach**. 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.

**Pancreas**

The right limb of the **pancreas** was mildly hypoechoic and slightly irregular. This is most consistent with low-grade gastritis, possible pancreatitis. Right subxiphoid palpation recommended to assess for any discomfort.



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**ULTRASONOGRAPHIC FINDINGS**

- Mild microhepatica – likely portal hypoplasia/microvascular dysplasia.
- Possible low-grade pancreatitis/gastritis

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Assessment for any history of GI issues recommended. GI protectant protocol indicated and pain management warranted if any discomfort is present upon deep subxiphoid palpation.

**BREED**

Shih Tzu

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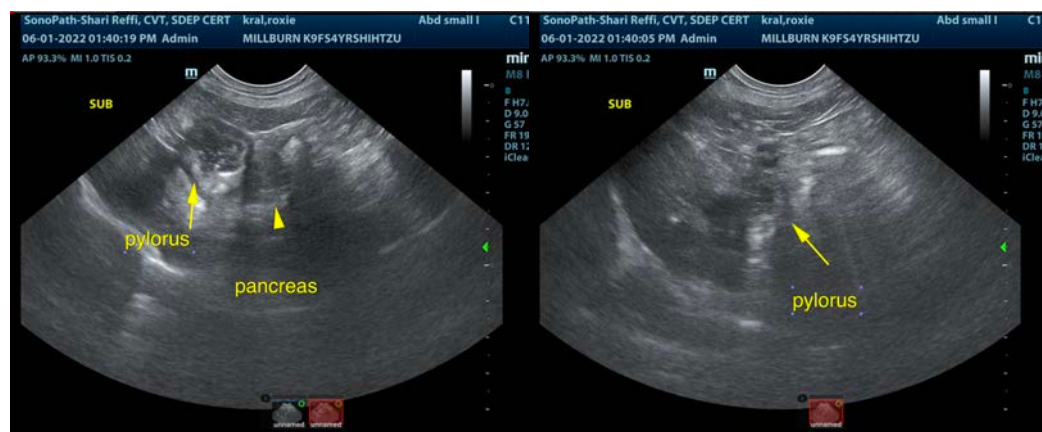
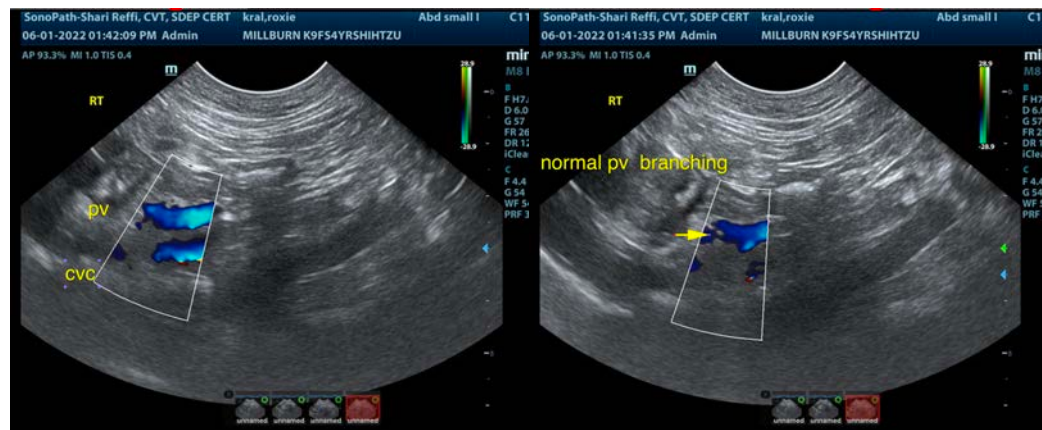
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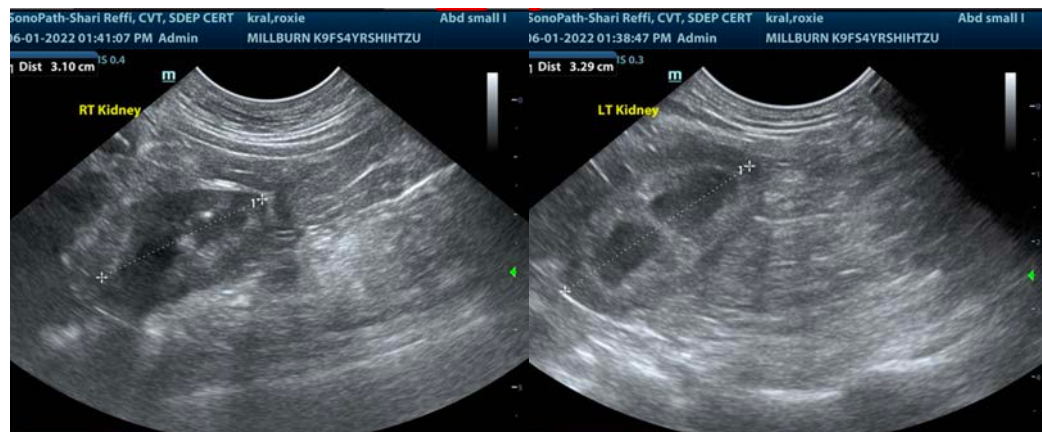
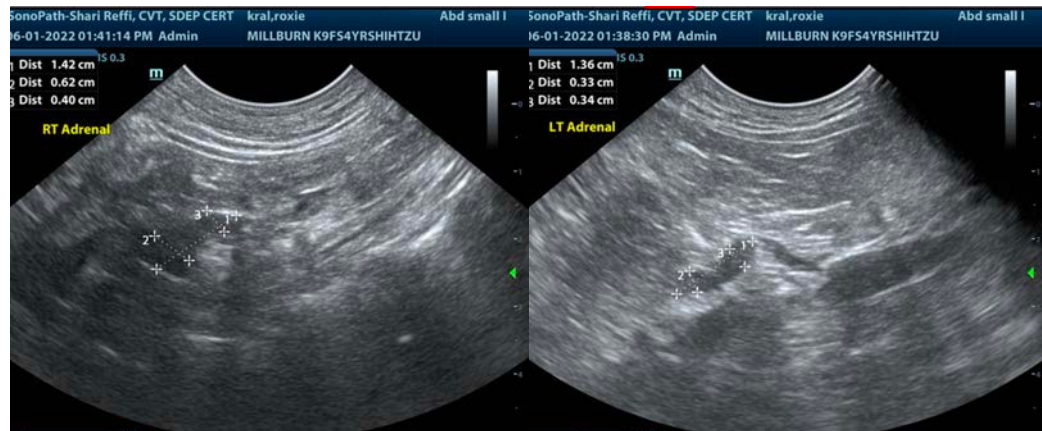
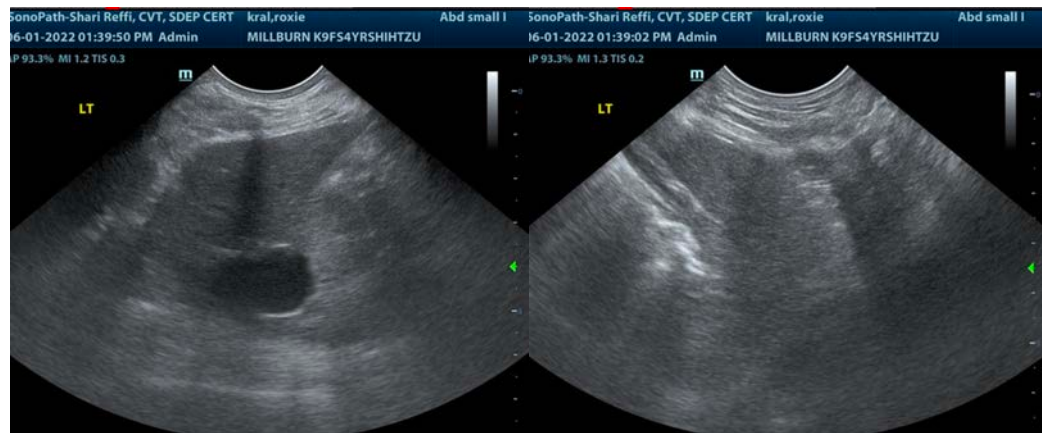
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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