



PATIENT

Riley Frias

SPECIES

Canine

BREED

Havanese Cross

SEX

Neutered male

AGE

7 years

WEIGHT

12 kg

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Corbeil

HOSPITAL NAME

Cochrane AC

REFERRING VET

Dr. Corbeil

INVOICE

74837

DATE

4/24/26

PRESENTING CLINICAL SIGNS

History: Abdominal ultrasound for elevated liver enzymes and mild elevated post prandial bile acids testing prior to anesthesia for dental. Clinically doing well. Ddx microvascular dysplasia, shunt (intra vs extrahepatic), vacuolar hepatopathy, Cushing's, other
01/30/2026 pre-anesthetic bloodwork: mildly elevated ALP of 237 U/L (reference range 23-212 U/L) - chronic/stable finding. 03/26/2026. bile acids - normal preprandial value of 14.8 µmol/L but a moderately to markedly elevated postprandial value of 49.2 µmol/L (reference range 0.0-29.9 µmol/L)
Started Aventi Liver Complete Tab for 6 weeks, with a plan to recheck bile acids after completion +- abdominal ultrasound

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 4.83 cm. The right kidney measured 4.34 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 left adrenal gland measured 1.5 x 0.57 cm at the caudal pole and 0.45 cm at the cranial pole. The right adrenal gland measured 1.6 x 0.86 cm at the cranial pole and 0.58 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 was noted.

Liver

The **liver** images submitted revealed subjectively normal liver contour and structure, yet was slightly subnormal. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. The



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intrahepatic vascular volume appeared to be normal, which is a negative predictive factor for portosystemic shunting. The portal vein and cava presented a 1:1 ratio with no evidence of extrahepatic shunting. There is no evidence of extrahepatic shunting and no suspicion of intrahepatic shunting. The gallbladder was unremarkable.

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.

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.

ULTRASONOGRAPHIC FINDINGS

Minor microhepatica

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There was no evidence of macroscopic shunting, likely portal hypoplasia or hepatic insult causing bile acid elevations. Liver biopsy would be necessary for further definition, yet unremarkable presentation.

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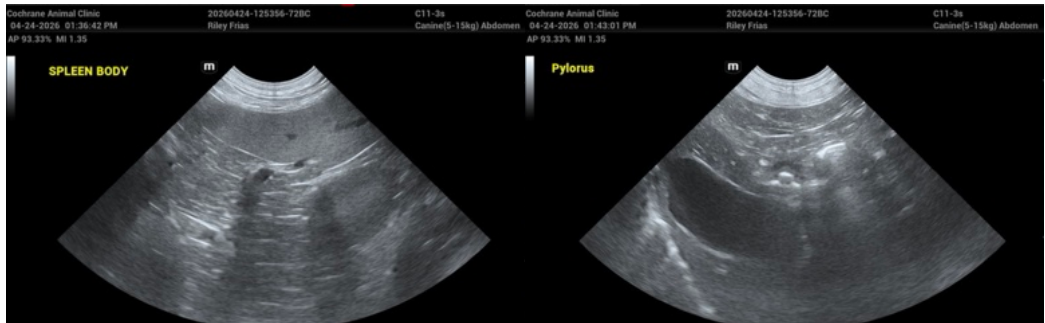
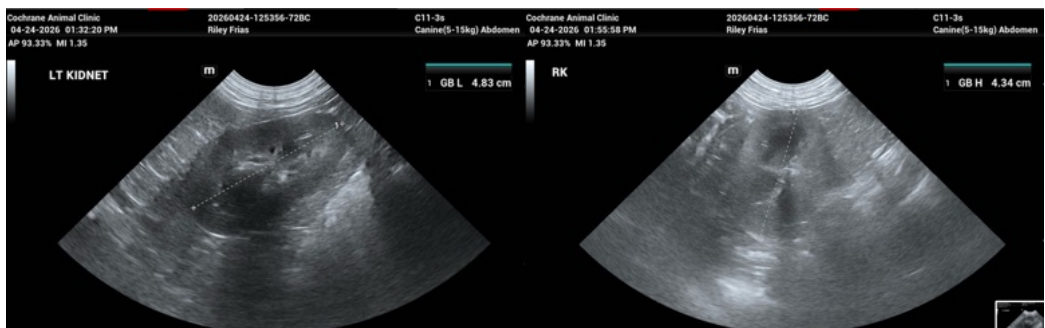
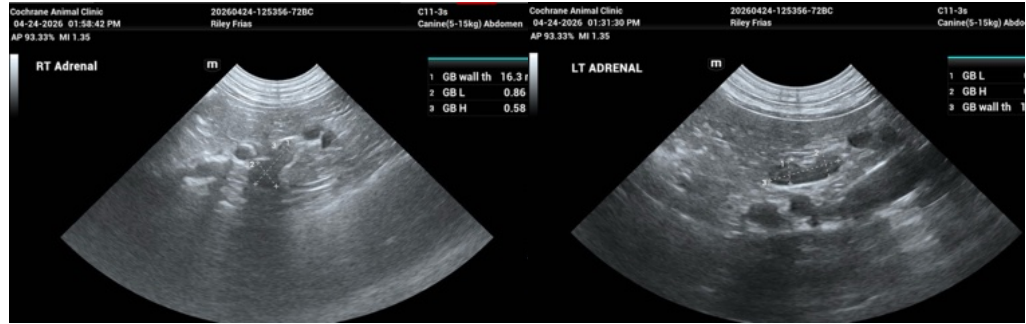
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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 (CFM), Cert. IVUSS, CEO of SonoPath.com

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