



PATIENT

Franklin Rivera

SPECIES

Canine

BREED

Yorkie

SEX

Male

AGE

2 years

WEIGHT

4.7 lbs

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Sanchez

HOSPITAL NAME

Sunset AH

REFERRING VET

Dr. Sanchez

INVOICE

42854

DATE

12/5/22

PRESENTING CLINICAL SIGNS

History: Patient had a seizure-like episode 1 month ago Blood work and radiographs performed No episodes since

Abnormal PE/Chem/CBC/UA Results: PE: BCS 4/9 Chem: ALT 265, BG 231 Radiographs: Mild microhepatica Bile acids: Pre 1.7, Post 106.5

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 prostate was uniform and measured 2.0 cm with no evidence of pathology.

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 dilatation was present. The capsules were acceptably uniform without significant irregularities. The left kidney measured 2.93 cm. The right kidney measured 3.58 cm.

Adrenal Glands

Both **adrenal glands** appeared subjectively subnormal in size. The left adrenal gland measured 0.4 cm. The right adrenal gland measured 0.4 cm.

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 slightly subnormal, yet there was no evidence of intrahepatic or extrahepatic shunting. The portal vein was visualized obliquely and appeared to have adequate volume. The vena cava and aorta presented normal volume. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy 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



PATIENT

Franklin Rivera

demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

SPECIES

Canine

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.

BREED

Yorkie

ULTRASONOGRAPHIC FINDINGS

SEX

Minor microhepatica.

Male

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

AGE

2 years

Screening for underlying Addison's is indicated. Given the breed and presentation microvascular dysplasia/portal hypoplasia is likely. I cannot absolutely rule out the presence of extrahepatic shunting in this patient; however, the portal vein measured 0.5 cm at its bifurcation which would suggest no evidence of shunting. Hepatic biopsy is warranted if bile acids are persistently elevated on follow-up given the seizure episode. Primary epilepsy or other CNS pathology may be playing a role. The elevated bile acids may be lowering the seizure threshold. Skull CT would be appropriate as well as liver biopsy. A clinical trial of the following may prove to be empirically successful regarding reducing bile acids.

WEIGHT

4.7 lbs

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.

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Sanchez

HOSPITAL NAME

Sunset AH

REFERRING VET

Dr. Sanchez

INVOICE

42854

DATE

12/5/22





PATIENT

Franklin Rivera

SPECIES

Canine

BREED

Yorkie

SEX

Male

AGE

2 years

WEIGHT

4.7 lbs

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Sanchez

HOSPITAL NAME

Sunset AH

REFERRING VET

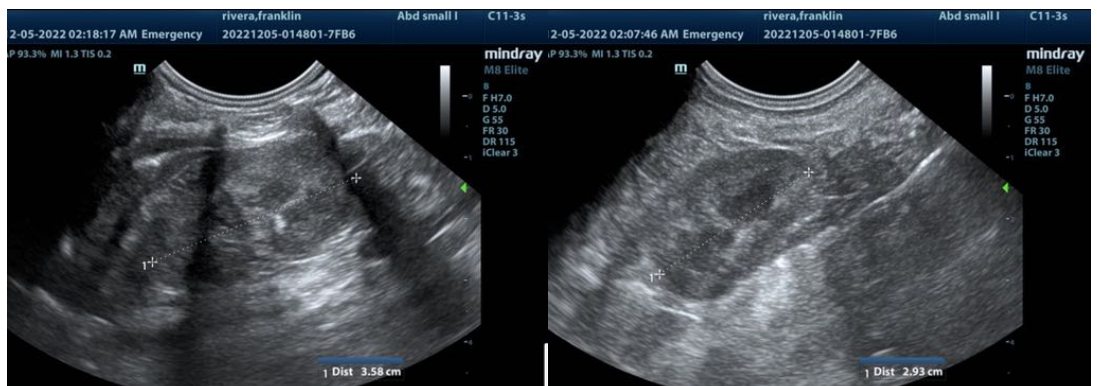
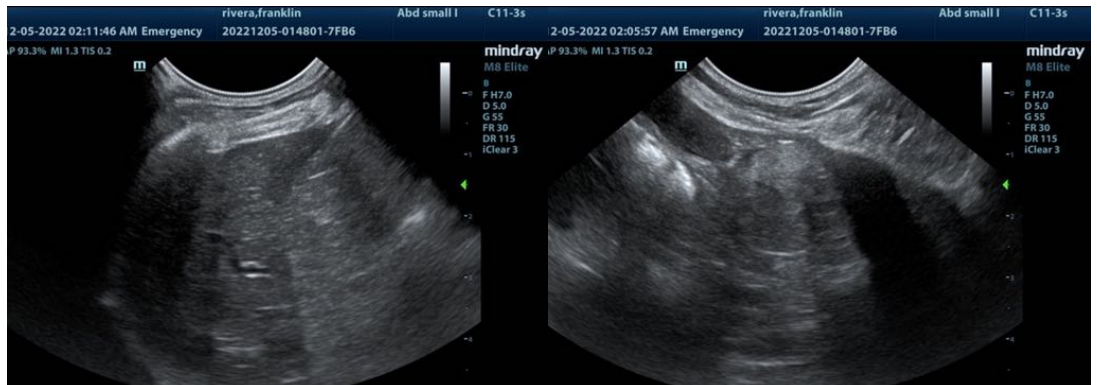
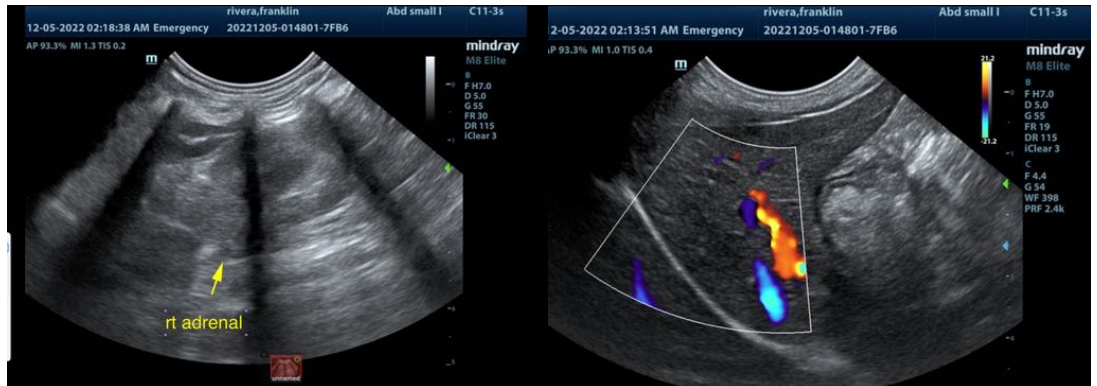
Dr. Sanchez

INVOICE

42854

DATE

12/5/22



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