



PATIENT PRESENTING CLINICAL SIGNS

Lily Edwards Routine bloodwork done prior to spay showed a significant ALT increase at 454 U/L (10-125) Bile acids were done and pre was normal at 6.0 umol/L (0-14.9) but post were elevated at 69 umol/L (0-29.9) No abnormalities on exam except in dentition- large overbite. Trying to rule out a PSS or microvascular dysplasia. No meds.

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

BREED

Havanese

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.

SEX

Intact Female

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 3.5 cm. The right kidney measured 3.81 cm.

AGE

2 Years

Adrenal Glands

WEIGHT

5.4 kg

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 1.12 cm x 0.41 cm at the caudal pole and 0.44 cm at the cranial pole. The left adrenal gland measured 1.47 cm x 0.44 cm at the caudal pole and 0.39 cm at the cranial pole.

INTERPRETED BY

Eric Lindquist, DMV

Spleen

DABVP, Cert. IVUSS

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.

IMAGING PERFORMED BY

Crystal Hill

Liver

HOSPITAL NAME

Simcoe AH

Mild **microhepatica** noted. The gallbladder was unremarkable.

The portal vein and vena cava were clearly visualized. Portal vein to vena cava ratio was 1:1. Both measured 4.0 mm. No evidence of portosystemic shunting.

REFERRING VET

Dr. Kennedy

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.

INVOICE

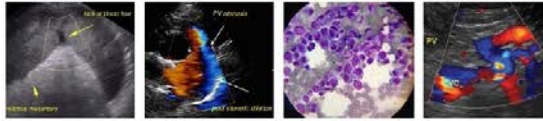
38370

Pancreas

DATE

6/3/22

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.



PATIENT **ULTRASONOGRAPHIC FINDINGS**

Lily Edwards

- Minor microhepatica – likely portal hypoplasia/microvascular dysplasia.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

SPECIES

Canine

Significant body movement in this patient, causing artifact. However, some views demonstrated normal portal vein to vena cava ratio, which rules out the presence of extrahepatic shunting. Intrahepatic shunting was not evident either. Hepatic biopsy would necessary to confirm the presence of portal hypoplasia/microvascular dysplasia.

BREED

Havanese

Hepatic Support for Bile Acid Elevation +/- Hepatic Encephalopathy

SEX

Intact Female

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.

AGE

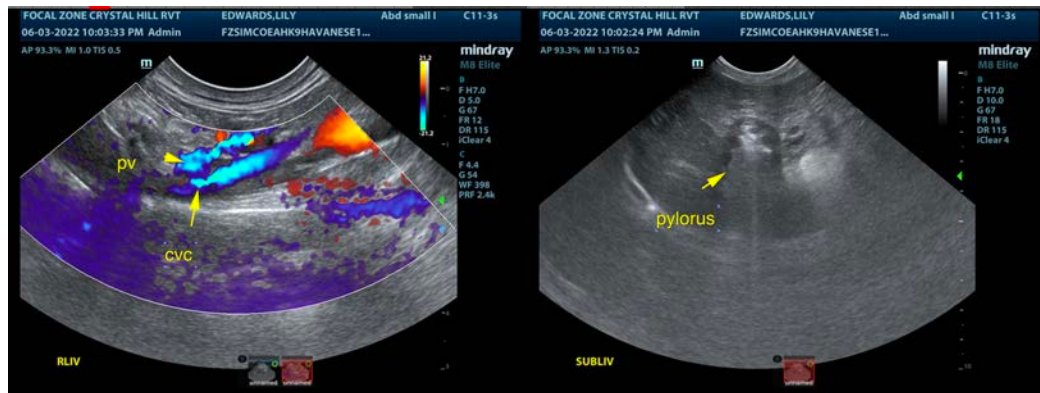
2 Years

WEIGHT

5.4 kg

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS



IMAGING PERFORMED BY

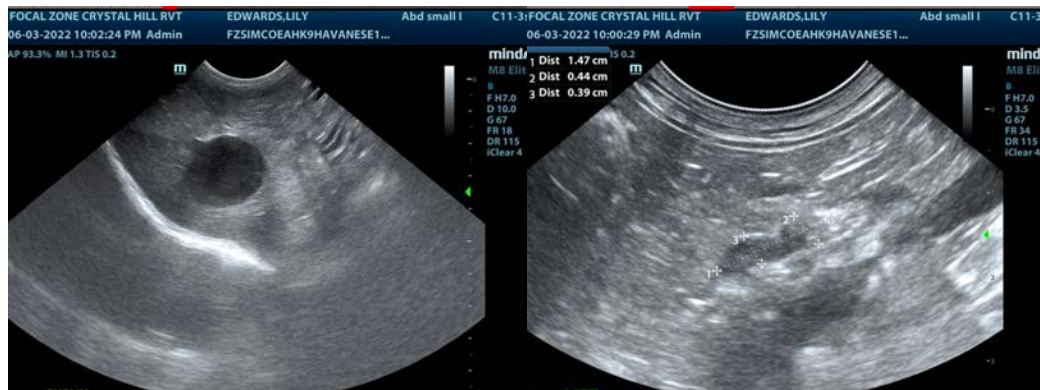
Crystal Hill

HOSPITAL NAME

Simcoe AH

REFERRING VET

Dr. Kennedy

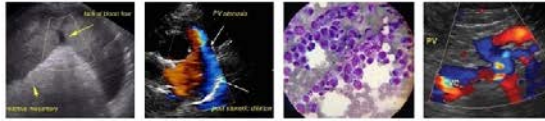


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DATE

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PATIENT

Lily Edwards

SPECIES

Canine

BREED

Havanese

SEX

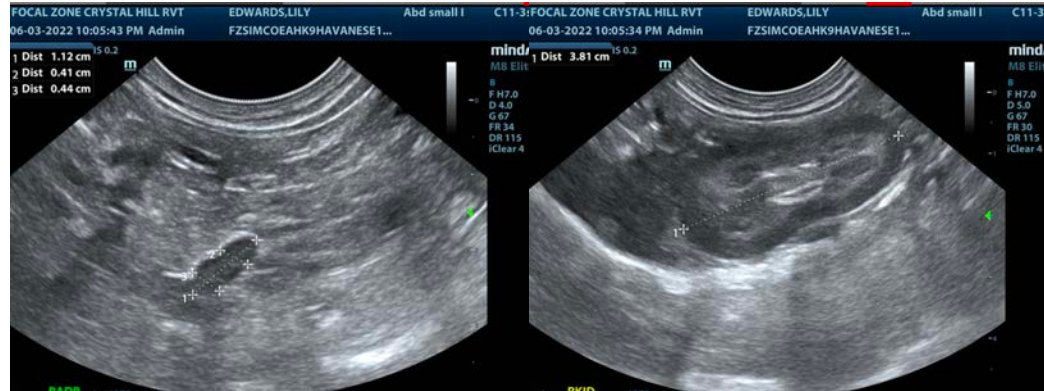
Intact Female

AGE

2 Years

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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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