



**PATIENT**

Charlotte West

**SPECIES**

Canine

**BREED**

Havanese

**SEX**

Female Spay

**AGE**

9

**WEIGHT**

4.5 kg

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**IMAGING  
PERFORMED BY**

Dr. Belan

**HOSPITAL NAME**

Healing Traditions  
AH

**REFERRING VET**

Dr. Vockeroth

**INVOICE**

14868

**DATE**

9/14/22

**PRESENTING CLINICAL SIGNS**

Non clinical history of elevated liver enzymes

Abnormal PE/Chem/CBC/UA Results: Moderate elevation of liver enzymes

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder was mildly subnormal in size. The urinary bladder, trigone, and cystourethral junction exhibited normal thickness and tone. Anechoic urine was present in the lumen with no sediment or calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic criteria was noted.

The area of the aortic trifurcation was free of pathology.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. Pinpoint medullary mineral was noted in both kidneys. No evidence of pelvic dilation was present. The left kidney measured 3.7 cm in length. The right kidney measured 3.4 cm in length.

**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.36 cm width at the caudal pole and 0.36 cm width at the cranial pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.28 cm width at the caudal pole and 0.35 cm width at the cranial pole.

**Spleen**

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

**Liver/ Gallbladder**

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. Intermittent discrete isoechoic to mildly hypoechoic nondisruptive intraparenchymal nodules were present. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

**Gastrointestinal**

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.



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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

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Normal visible colon wall layers were present with apparent formed feces in lumen.

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**Pancreas**

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

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**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.

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**ULTRASONOGRAPHIC FINDINGS**

- Nonspecific hepatopathy - subjectively benign
- Sonographically unremarkable gallbladder / common bile duct
- Mild age-related renal changes with pinpoint medullary mineral

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The overall appearance of the liver was nonspecific yet consistent with benign hepatopathy exhibiting mild generalized parenchymal remodeling. Considerations may include vacuolar hepatopathy, inflammatory / immune-mediated disease, toxic hepatopathy i.e., copper, nodular hyperplasia, hematopoiesis, early to mild fibrosis, or other hepatopathy, with infiltrative neoplasia considered unlikely.

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Screening hepatic FNA cytology for further assessment could be considered assuming normal clotting status. Hepatic core or surgical biopsy is likely required for a definitive diagnosis. Hepatic functionality is likely normal, assuming normal albumin, glucose, BUN, and cholesterol levels. Hepatosupportive medications such as Denamarin +/- Ursodiol, due to its antioxidant and immunologic effects within the liver, and continued monitoring of hepatic enzyme elevations would be a more conservative approach.

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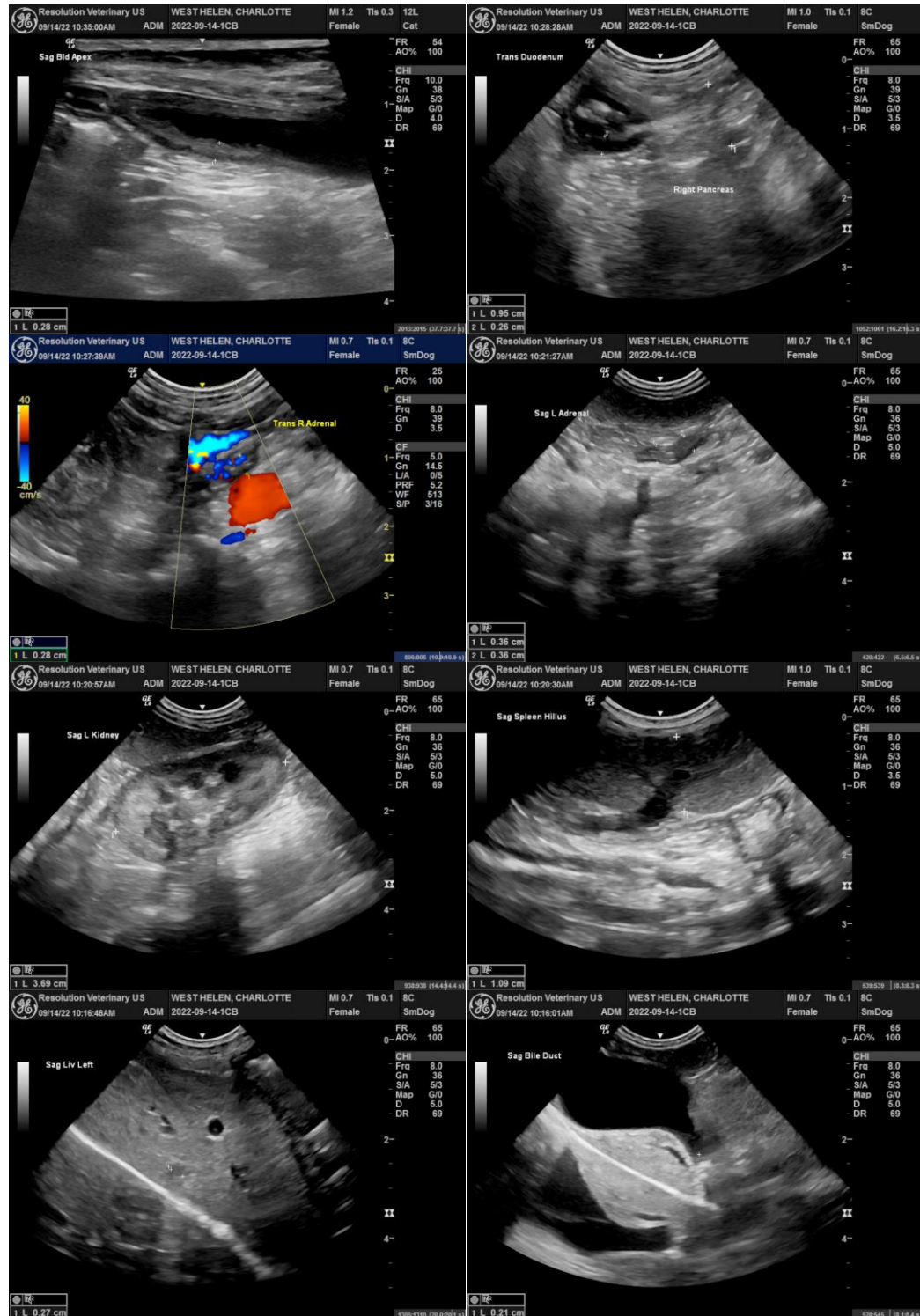
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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.

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**info@SonoPath.com**

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