



**PATIENT PRESENTING CLINICAL SIGNS**

Merlin Winans 3 weeks decreased appetite -intermittent vomiting and diarrhea -mild lethargy Current Medications Trazodone, clomipramine Primary Question/Differential to Be Answered in This Exam Reason for elevated liver enzymes?

**SPECIES**

Canine Abnormal PE/Chem/CBC/UA Results: -markedly increased ALT and ALKP -ALT- 5,707 U/L -ALP- 4,262 U/L -Bili- 0.9mg/dL PT/PTT wnl

**BREED**

Boston Terrier

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**SEX**

Neutered Male

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. No mineral or calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

**AGE**

11 Years

The residual prostate was symmetrically normal in size (0.86 cm in width) with uniform parenchyma and slight coarse echotexture.

**WEIGHT**

7.3 kg

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 loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Pinpoint discreet areas of medullary mineral noted. The left kidney measured 5.0 cm. The right kidney measured 5.2 cm.

**INTERPRETED BY**

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

**Adrenal Glands**

The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.47 cm at the cranial pole and 0.53 cm at the caudal pole. The right adrenal gland was mildly prominent in size based on caudal pole width measurement in light of body weight, exhibiting subtle non-homogeneous, non-mineralized parenchyma. The right adrenal gland measured 0.65 cm at the cranial pole and 0.71 cm at the caudal pole.

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

Silver Creek AC

**Spleen**

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Subjective cranial displacement noted within the area of the left liver, adjacent to the left diaphragm. 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.

**REFERRING VET**

Dr. Ceremuga

**Liver**

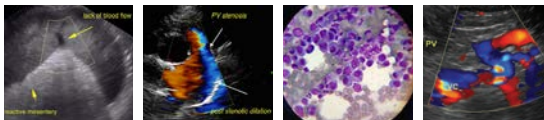
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The liver exhibited indistinctly visualized mid to left liver with potential for mid to left microhepatica. The mid to right liver exhibited subjective hepatomegaly with potential mid to right lobar swelling, uniform parenchyma exhibiting normal echogenicity, with rounded yet symmetrical hepatic contour. Overall normal hepatic vascular volume. The gallbladder exhibited normal size with overtly normal walls without overt inflammatory criteria, containing anechoic content. No evidence of peripheral inflammation. The

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2/27/23



**PATIENT**

Merlin Winans

common bile duct was not definitively visualized and was overtly normal without evidence of post-hepatic obstructive criteria.

**SPECIES**

Canine

**Gastrointestinal**

The stomach presented wall thickening secondary to echogenic mucosa hypertrophy. Intact wall layering was maintained and distinct. Mild gastric distension with primarily anechoic fluid was present.

**BREED**

Boston Terrier

The small intestine presented intact yet subjective prominent duodenal and segmental jejunal walls. Very discreet duodenojejunal mucosal speckling noted. No evidence of obstructive pattern. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material.

**SEX**

Neutered Male

Normal visible colon wall layers were present with semiformal to soft fecal matter present in the proximal colon, while the descending colon was primarily empty.

**Pancreas**

**AGE**

11 Years

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

**WEIGHT**

7.3 kg

**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.

**ULTRASONOGRAPHIC FINDINGS**

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DVM, DABVP  
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- Hepatopathy exhibiting subjective decreased left hepatic volume/microhepatica with variable right liver hepatomegaly to lobar swelling
- Sonographically unremarkable non-distended gallbladder
- Mild chronic renal changes
- Non-specific prominent right adrenal gland
- Pancreatic remodeling
- Gastroenteritis pattern, potential non-specific inflammatory bowel

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The liver was non-specific with potential considerations including non-specific hepatitis (viral, bacterial, Leptospirosis, toxin, etc.), vacuolar hepatic changes, hyperplasia, hematopoiesis, non-obstructive/hepatic cholestasis, or other hepatopathy with infiltrative neoplasia thought less likely. Correlation with pending splenic FNA cytology recommended. No evidence of a portosystemic shunt.

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The gastrointestinal signs of the patient could potentially be metabolic in nature, possibly secondary to hepatopathy, although concurrent intestinal disease or low-grade/chronic pancreatitis cannot be excluded as contributing factors. Further assessment may include GI panel to include PLI, TLI, cobalamin, and folate. Leptospirosis titers/PCR suggested if clinically indicated. Empirically, hepatosupportive medications including Denamarin and Ursodiol as well as as-needed gastrointestinal support, which may include dietary therapy, high colony count probiotic, gastroprotectants would be reasonable.

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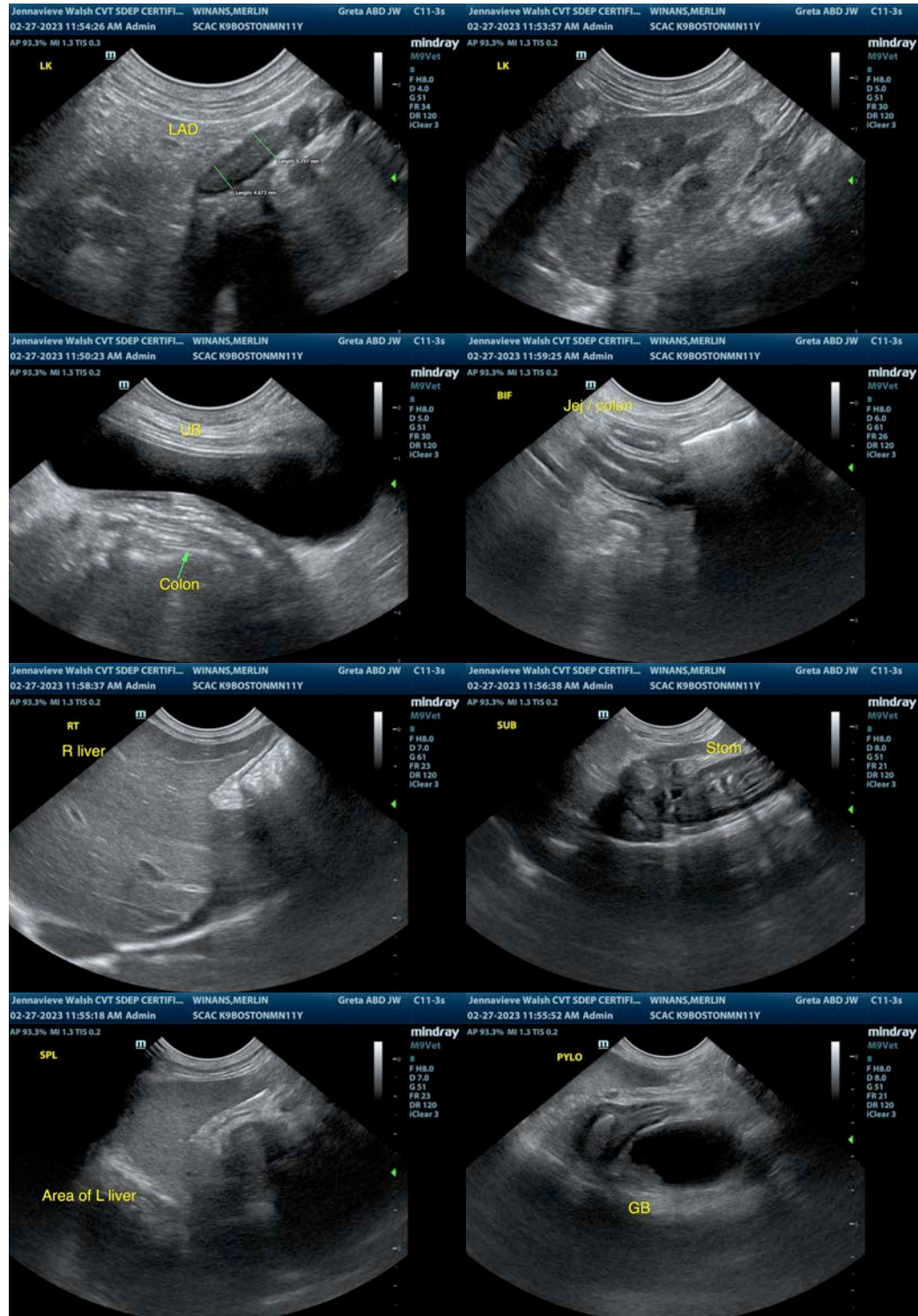
Dr. Ceremuga

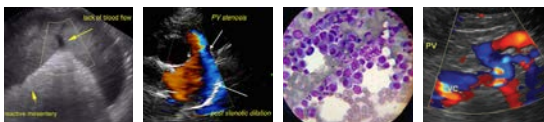
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## SPECIES

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## BREED

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## SEX

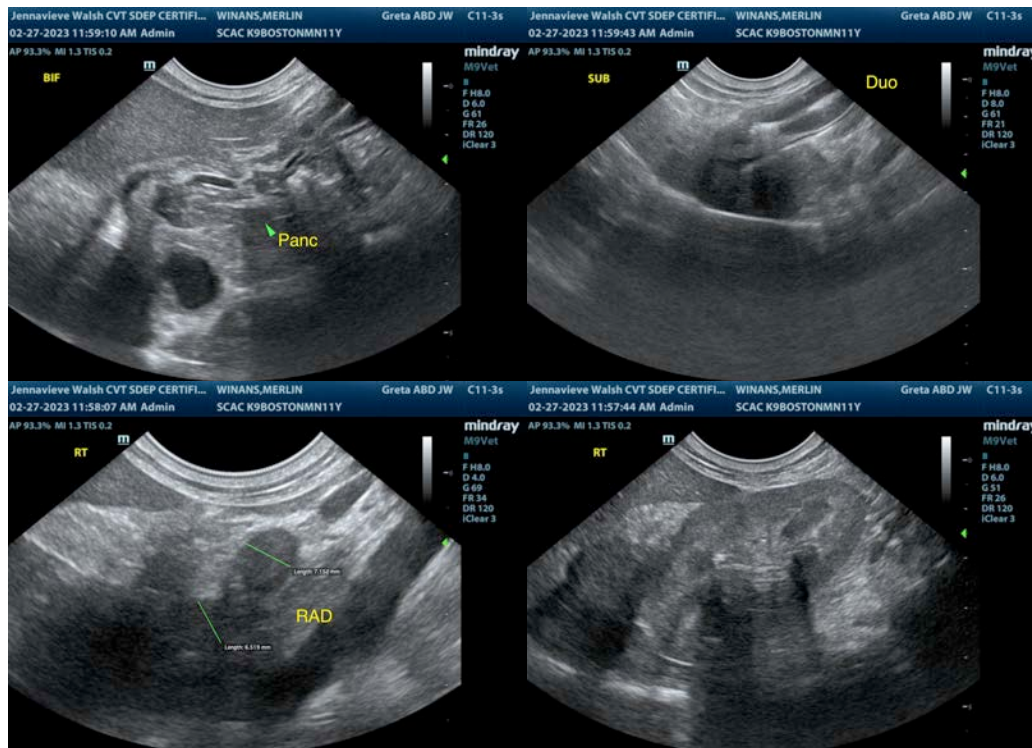
Neutered Male

## AGE

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## WEIGHT

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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.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**

info@SonoPath.com