



**PATIENT**

Bowser Cummings

**SPECIES**

Canine

**BREED**

Great Dane X

**SEX**

Neutered Male

**AGE**

4 Years

**WEIGHT**

59 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Jasmine Palacios

**HOSPITAL NAME**

Rivers Edge Pet  
Medical Center

**REFERRING VET**

Dr. Travis Gibson

**INVOICE**

42606

**DATE**

11/7/22

**PRESENTING CLINICAL SIGNS**

Presented 10/30 for Wt loss (BSC 2/9), inappetence, vomiting, dark & tarry stool, dark UR, nasal d/c and wheezing. Dr. on primary differential was leptospirosis. Presented back the next day for continued inappetence and vomiting water. At that time symptomatic care was chosen with suspicion of added on gastric ulceration. Patient presented today 11/7 with substantial weight loss, severe jaundice, and vomiting all food and water. Owner said he appeared to have a turn around 4 days ago and then reverted back substantially. P currently on Denamarin, doxycycline. Previously on the sucralfate and cerenia.

Abnormal PE/Chem/CBC/UA Results: Please see attached labs from 10/3 and 11/7: Free fluid obtained post AUS was slightly yellow tinged clear fluid - USG 1.008, TP of zero (0)

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder, trigone, and cystourethral junction exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild to moderate non-dependent particulate sediment was present, which may indicate cellular debris/protein, crystalline debris or mucus. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted.

No overt pathology in the area of the residual prostate.

No evidence of significant medial iliac or sublumbar lymphadenopathy.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 7.4 cm. The right kidney measured 7.1 cm.

**Adrenal Glands**

The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 3.0 cm length x 0.53 cm at the caudal pole. The right adrenal gland measured 3.3 cm length x 0.75 cm at the caudal pole.

**Spleen**

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. The capsule was smooth and regular without apparent expansion. No splenic masses or nodules noted. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age related remodeling with minor potential for inflammatory or neoplastic disease.

**Liver**

The liver was overtly normal in size with areas of mild capsule asymmetry. Generalized non-homogeneous to mild mixed echogenic hepatic parenchyma exhibited moderate coarse echotexture and evidence of generalized to variable parenchymal remodeling. No evidence of hepatic masses. The gallbladder was non-distended with mildly thickened to hyperechoic gallbladder walls. Anechoic content noted with mild



<b>PATIENT</b>	luminal echogenic debris. The common bile duct was not definitively visualized, without overt evidence of post-hepatic obstructive criteria.
Bowser Cummings	
<b>SPECIES</b>	<b>Gastrointestinal</b>
Canine	The stomach presented wall thickening secondary to echogenic mucosa hypertrophy. Intact wall layering was maintained and distinct. Moderate retained echogenic fluid and chyme noted. No overt evidence of shadowing gastric ingesta, foreign material, or mechanical pyloric outflow obstruction.
<b>BREED</b>	Generalized increased intestinal mucosa echogenicity with diffuse mucosa speckling to echogenic mucosal striations were present. The duodenum exhibited prominent yet intact wall layering with mild altered 1:3 muscularis / mucosa ratio. There was no evidence of an obstructive pattern or foreign material. The appearance of the small intestine is most consistent with protein losing enteropathy or lymphangiectasia. There was no evidence of infiltrative or neoplastic intestinal disease which is considered unlikely but cannot be ruled out without full thickness or endoscopic biopsies. Segmental subjective non-obstructive jejunal ileus was present with segmental minor retained non-shadowing chyme to the level of the ileocolic junction. No overt evidence of pathology at the level of the ileocolic junction.
Great Dane X	
<b>SEX</b>	
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<b>AGE</b>	The colon walls presented intact yet prominent wall layering with mild thickened to echogenic submucosa. The colon contained generalized soft to non-formed fecal matter, consistent with patient history.
4 Years	
<b>WEIGHT</b>	<b>Pancreas</b>
59 Pounds	The pancreas presented generalized enlargement with swollen capsule contour. Non-homogeneous parenchyma exhibiting hypoechoic parenchymal striations.
<b>INTERPRETED BY</b>	<b>Free Abdomen</b>
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	Mild volume peritoneal free fluid was present.
<b>IMAGING PERFORMED BY</b>	Intermittent, mildly prominent to enlarged mesenteric nodes were present, not overtly consistent with inflammatory or neoplastic criteria. The lymph node was essentially isoechoic to adjacent omentum without evidence of peripheral inflammation and maintaining a normal width: length ratio (<0.5).
Jasmine Palacios	Generalized mild hyperechoic omentum noted.
<b>HOSPITAL NAME</b>	<b>ULTRASONOGRAPHIC FINDINGS</b>
Rivers Edge Pet Medical Center	<ul style="list-style-type: none"> <li>• Mild urinary bladder sediment</li> <li>• Sonographically unremarkable bilateral kidneys – renal versus prerenal azotemia.</li> <li>• Heterogeneous to irregular liver – suggestive of chronic or acute on chronic hepatopathy (vacuolar hepatopathy), chronic to acute on chronic inflammatory/immune mediated disease, fibrosis, hematopoiesis, hyperplasia, infiltrative neoplasia, or other hepatopathy possible.</li> <li>• Non-distended gallbladder containing mild luminal debris – subjective mild cholecystitis pattern.</li> <li>• Generalized gastroenteropathy exhibiting gastric and segmental intestinal hypomotility with increased intestinal mucosa echogenicity.</li> <li>• Edematous pancreas – suspect secondary to hypoalbuminemia, potential for mild concurrent inflammation.</li> </ul>
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**PATIENT**

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- Mild volume peritoneal free fluid

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**SPECIES**

Canine

This is a complicated case with potential multifactorial etiologies contributing to the patient's clinical signs and lab work abnormalities. Sonographically, the gastrointestinal tract may suggest protein losing enteropathy with inflammatory component, given the hypoalbuminemia, with infiltrative gastrointestinal neoplasia a potential consideration.

**BREED**

Great Dane X

A GI panel to include PLI/TLI/Cobalamin/Folate is recommended. Assuming normal clotting status, screening FNA cytology warranted. Leptospirosis/PCR may be considered if clinically indicated. Full urinary workup including urinalysis +/- urine culture and sensitivity if evidence of inflammatory cells. CBC pathology review as well as pathology assessment of peritoneal free fluid warranted. Empirically, hospitalization with IV fluid support (assuming normal cardiopulmonary status on 3-view chest radiographs), plasma expanders, broad-spectrum antibiotics, deworming protocol, and as needed hepato-gastrointestinal support with assessment of clinical response +/- sonographic monitoring would be reasonable. Guarded prognosis.

**AGE**

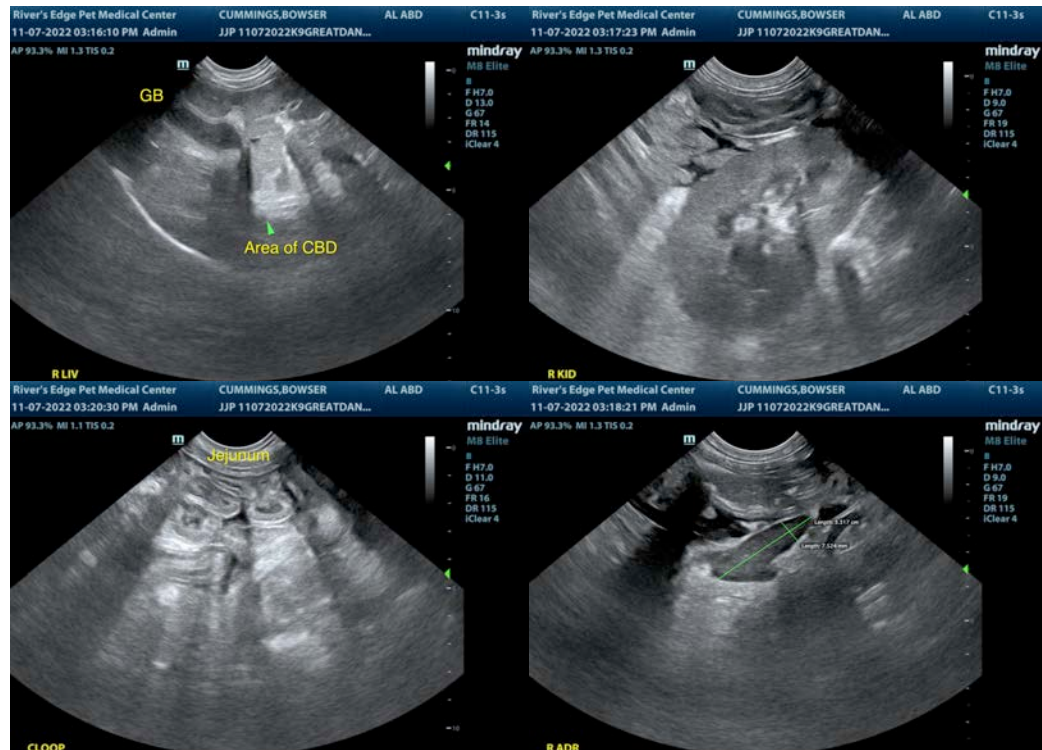
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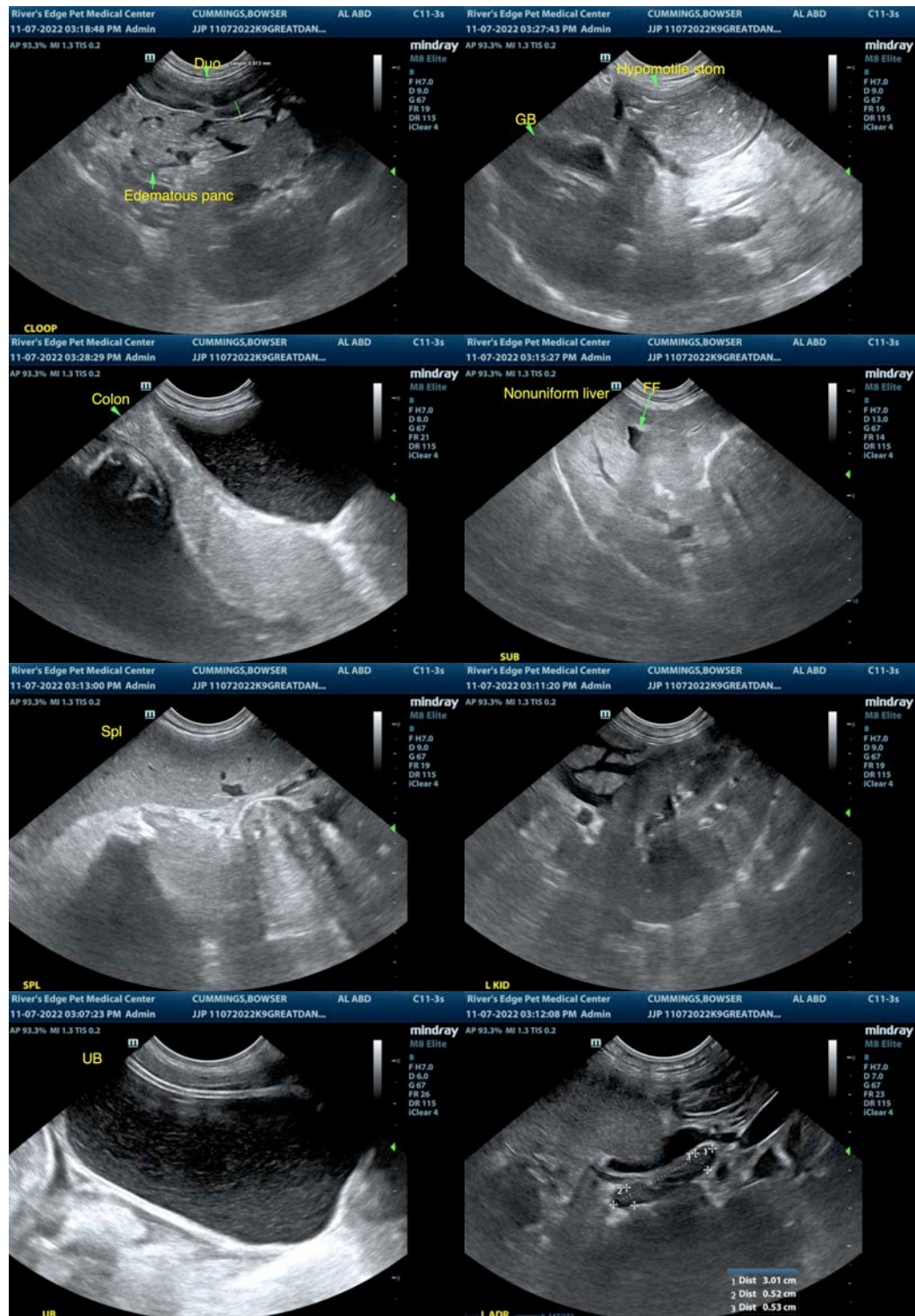
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

**SPECIES**

Canine

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)**

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info@SonoPath.com

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