



## PATIENT PRESENTING CLINICAL SIGNS

Bentley Pacifico

History: Gastric polyp (surgically removed in September 2022) and mild myxomatous valve disease. The polyp was initially identified via ultrasound during a workup for microcytic, hypochromic anemia.

### SPECIES

Canine

Histopathology demonstrated severe lymphoplasmacytic enteritis of the duodenum and jejunum and severe lymphoplasmacytic gastritis of the pylorus. Recently diagnosed with chronic kidney disease IRIS Stage 2.

Follow up labwork yesterday showed sudden spike in liver enzymes and a low albumin. AUS to screen for etiology.

### BREED

Shih Tzu

Abnormal PE/Chem/CBC/UA Results: Mild to moderate azotemia/kidney dysfunction BUN 76 mg/dL (H) Creatinine 1.9 mg/dL (H) SDMA 21 µg/dL (H) BUN:Creatinine ratio 40 (H) Findings are consistent with decreased renal filtration and may represent chronic kidney disease if persistent. Elevated liver enzymes ALT 316 IU/L (H) ALP 310 IU/L (H) Indicates hepatocellular injury and/or cholestatic enzyme induction.

### SEX

Neutered Male

Total bilirubin remains normal. Mild hypoalbuminemia Albumin 2.6 g/dL (L) A/G ratio 0.7 (L) May be associated with hepatic dysfunction, chronic inflammation, or protein loss. Mild thrombocytosis Platelet count 514,000/µL (H) Likely a reactive change associated with inflammation, chronic disease, or physiologic stress. USG 1.020. No abnormalities on sediment.

### AGE

14

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### WEIGHT

12.8 lbs

#### Urinary System

Urinary bladder is adequately distended with primarily anechoic contents and occasional echogenic non-shadowing debris. Apical urinary bladder wall is diffusely thick (0.81 cm). Mucosa is hyperechoic and irregular. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface.

### INTERPRETED BY

Beth Johnson, DVM  
DACVIM

The kidneys are normal-in-size (left 3.5 cm) (right 3.7 cm) irregular and diffusely echogenic with decreased corticomedullary distinction and poor visualization of internal architecture. Mild pyelectasia is noted bilaterally. No mineral is observed.

### IMAGING PERFORMED BY

Dr. Vincent Tavella

Prostate is normal in size, echotexture and echogenicity for a neutered male.

### HOSPITAL NAME

Williamsburg VC

#### Adrenal Glands

Adrenal glands are plump/swollen in size (left 0.72 cm at the cranial pole and 0.86 cm at the caudal pole) (right 0.96 cm at the cranial pole and 0.6 cm at the caudal pole). Normal shape and contour are maintained without evidence of capsular invasion. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

### REFERRING VET

Dr. Vincent Tavella

#### Spleen

Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

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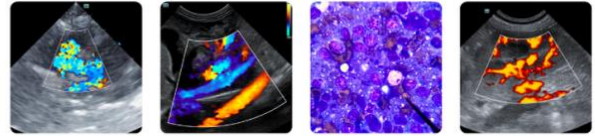
#### Liver

Liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

### DATE

6-5-26

Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. Some mineral/sand debris is suspected, with no visible evidence of obstruction. The wall of the gallbladder appears as a thin hyperechoic/calcified rim casting a distinct distal acoustic shadow. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.



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### **Gastrointestinal**

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

### **Pancreas**

The pancreas that is observed appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

### **Lymph Nodes**

The abdominal lymph nodes are normal/not visible.

### **Free Abdomen**

There is no visible free peritoneal effusion noted in these images.

There is no apparent pathologic lymphadenopathy noted in these images.

## ULTRASONOGRAPHIC FINDINGS

- Mild/subtle (for a small dog) bilateral adrenomegaly - In a patient diagnosed with hyperadrenocorticism, this finding is most consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism. This finding can also be seen with stress and/or normal patient variant. Interpret in combination with clinical signs of hyperadrenocorticism and/or other adrenal disease.
- Gallbladder debris - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili. Again, some mineral/sand debris is present without visible evidence of obstruction.
- Porcelain gallbladder - Porcelain (calcified) gallbladder is an uncommon finding in companion animals and has been observed as both an incidental finding and associated with biliary neoplasia. In humans, porcelain gallbladder can be a manifestation of chronic gallbladder disease, chronic cholecystitis, intramural hemorrhage with subsequent calcification, imbalances in calcium metabolism, and even giardiasis. This finding should be interpreted in combination with any clinical signs and/or laboratory changes suggestive of biliary disease and/or calcium dysregulation, etc.
- Chronic cystitis - Urinary bladder wall changes are most consistent with chronic cystitis. Infiltrative neoplasia cannot be ruled out but is considered less likely give the location and diffuse nature of the changes.
- Mild chronic kidney disease changes bilaterally with mild bilateral pyelectasia



**PATIENT INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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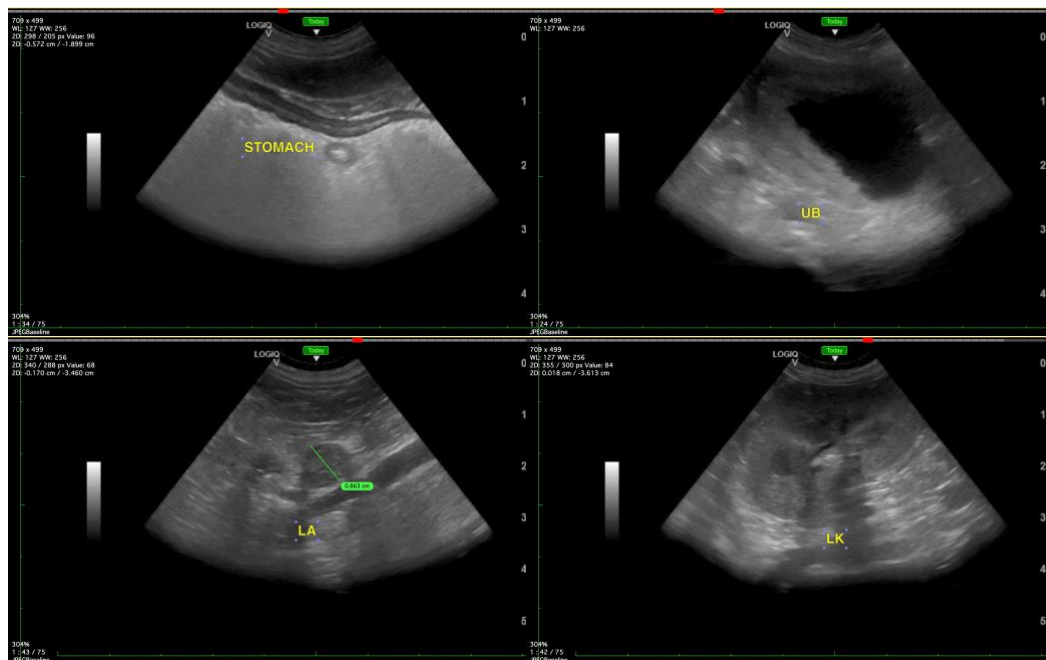
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- There is no definitive ultrasonographically-visible evidence of gastrointestinal pathology noted in these images at this time. However, full evaluation of the stomach wall is partially obscured by gas and contents. So, subtle focal thickenings, polyp, etc., cannot be definitively ruled out. Similarly, especially in patient's reportedly increased BUN and hypoalbuminemia, etc., microulceration cannot be ruled out. Having said that, without ongoing anemia to support that differential, other differentials and work-up for the reported hypoalbuminemia are indicated (including bile acids if patient's total bilirubin is not increased). Given the gastrointestinal history, a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function. If not already ruled out, ruling out proteinuria is recommended. A routine fecal/Giardia examination is recommended (if not recently evaluated).
- Adrenal gland changes should be interpreted in combination with patient's clinical history. Even if patient is clinical for hyperadrenocorticism, and is diagnosed, hyperadrenocorticism typically does not result in all of the laboratory abnormalities, etc. noted in this patient, so multiple etiologies could be appearing simultaneous. If patient is clinical for hyperadrenocorticism, then hormone testing can be considered, beginning with a low-dose dexamethasone suppression test. In the meantime, a blood pressure is recommended if not recently evaluated.
- Finally, given the azotemia and liver enzyme change, if not recently evaluated, infectious disease evaluation (including testing for Leptospirosis) can be considered.
- Other than supportive/symptomatic medical management of clinical signs, further treatment recommendations are largely dependent on results of the above.





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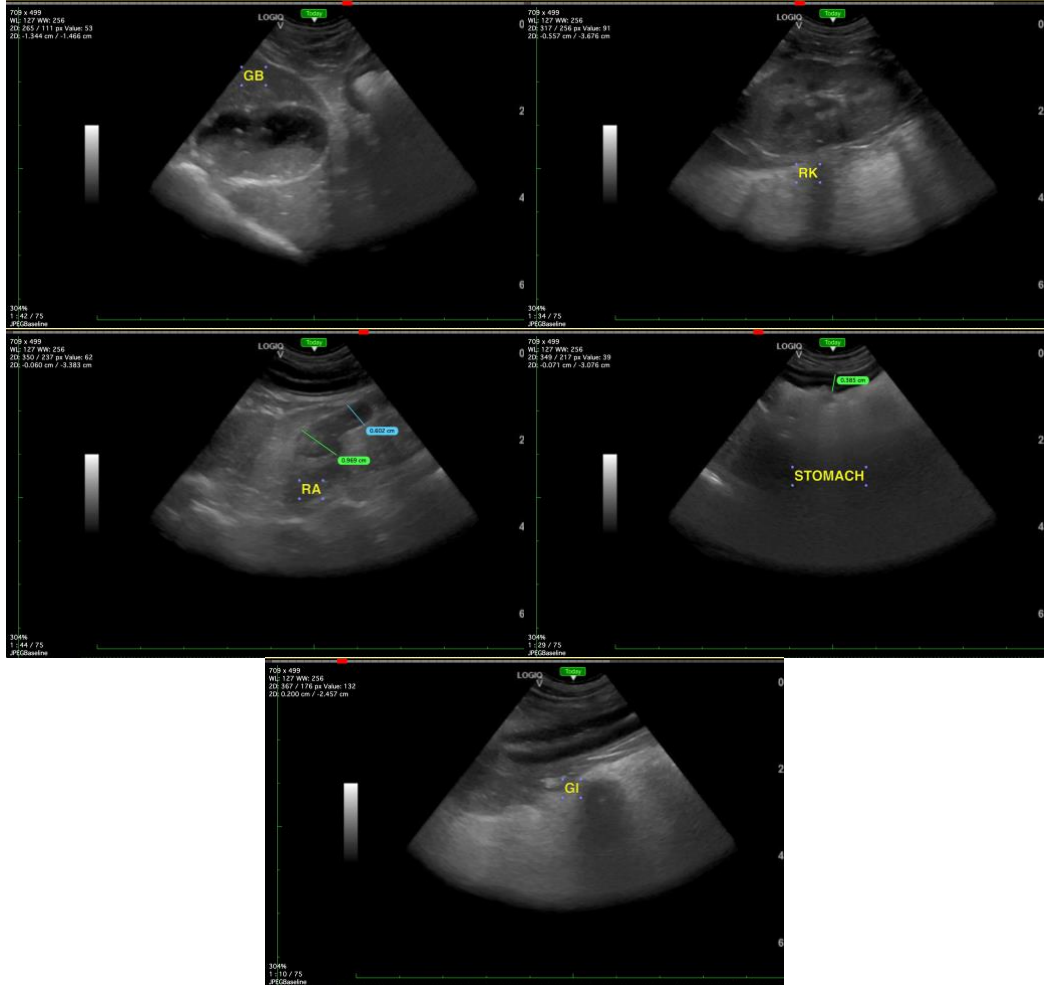
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM DACVIM  
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