



**PATIENT PRESENTING CLINICAL SIGNS**

**PATIENT**  
George Eaton

**SPECIES**  
Canine

**BREED**  
Akita Mix

**SEX**  
Female, spayed

**AGE**  
8 Yrs.

**WEIGHT**  
70.4 lbs.

**INTERPRETED BY**  
Andrea Nicastro, DVM,  
Diplomate ACVIM  
(Small Animal Internal  
Medicine)

**IMAGING PERFORMED BY**  
Jasmine Palacios

**HOSPITAL NAME**  
Rivers Edge Pet  
Medical Center

**REFERRING VET**  
Dr. Julie Bernier

**INVOICE**  
14180

**DATE**  
11/7/22

**History:** P was seen on 9/27/22 for diarrhea and vomiting. Liver enzymes were elevated at this time. O elected Metronidazole, Pro-pectalin, Denamarin and recheck enzyme. Vomiting and diarrhea resolved at this time. No improvement of the liver enzymes at the BW on 10/26/22 Current Medications: Denamarin only

**Abnormal PE/Chem/CBC/UA Results:** See attached labs: Liver enzymes elevated since September 2022. Last BW = 10/26/22. ALKP = 1191, ALT = 288. Rest of the values into the normal range

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder wall is normal in thickness and the mucosal surface is smooth. The bladder lumen is distended with mostly anechoic urine. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2-3 cm, are normal.

The left kidney is normal size (6.71 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney is normal size (6.94 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**Adrenal Glands**

The left adrenal gland is normal size (0.63 cm at cranial pole) (0.56 cm at caudal pole) (2.83 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is prominent at the cranial pole and normal in size at the caudal pole (1.22 cm at cranial pole) (0.66 cm at caudal pole) (3.09 cm in length). A 1.87 x 0.95 cm hyperechoic nodule/mass is observed at the cranial aspect. The glandular echogenicity and detail at the caudal aspect are unremarkable. Surrounding vasculature appears normal.

**Spleen**

The spleen is normal in size (2.66 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

**Liver**

The liver is subjectively normal in size with normal curvilinear peripheral contours. The parenchyma is isoechoic relative to the spleen and exhibits mild heterogeneity. No distinct focal lesions are observed. Hepatic vasculature and biliary tracts are of normal volume with no evidence of congestion. The gall bladder lumen is moderately distended. The wall is normal in thickness. A few polypoid like lesions are adhered to the luminal surface. Luminal contents are otherwise mostly anechoic. The cystic and common bile ducts are normal/not seen.



**PATIENT**

***Gastrointestinal***

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The gastric lumen is not distended. The gastric wall is normal in thickness with a normal layering pattern. The small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. No obstructive disease is noted.

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***Pancreas***

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The region of the pancreas is isoechoic relative to surrounding omental fat. No obvious parenchymal abnormalities are observed. There is no evidence of regional inflammation or effusion.

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***Free Abdomen***

The peritoneal cavity is normal. There is no evidence of inflammation or effusion. The abdominal lymph nodes are normal/not visible.

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**ULTRASONOGRAPHIC FINDINGS**

- Suspected diffuse hepatopathy. Differentials include a benign age-related process (i.e., regenerative nodular hyperplasia, vacuolar hepatopathy, age-related remodeling). However, a more significant hepatic pathology (i.e., inflammatory disease, hepatotoxicosis (i.e., copper), fibrosis, infiltrative neoplasia (less likely), other hepatopathy) cannot be completely excluded.
- The right adrenal nodule could be consistent with benign nodular hyperplasia or an emerging tumor.

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Diplomate ACVIM  
(*Small Animal Internal  
Medicine*)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

- If the patient is exhibiting clinical signs of Cushing's disease, consider further testing (i.e., low-dose Dexamethasone suppression test). In addition, consider a repeat ultrasound in 2-3 months to assess for progression of the right adrenal nodule.
- Regarding the elevated liver values, if a more conservative approach is desired at this time, consider rechecking liver values in 3 months. If values worsen, repeat abdominal imaging +/- further diagnostics may be warranted.
- If a more aggressive approach is desired at this time, consider the following:
  1. Pre and post prandial serum bile acids
  2. Leptospirosis serology
  3. Hepatic tissue sampling (i.e., fine needle aspirate or biopsy (laparoscopic or surgical)). If biopsies are pursued, bile samples should be obtained for aerobic and anaerobic cultures. In addition, at least one sample should be obtained for potential copper quantitation. While awaiting test results, continuation of the Denamarin +/- the initiation of Vitamin E and/or Ursodiol can be considered.

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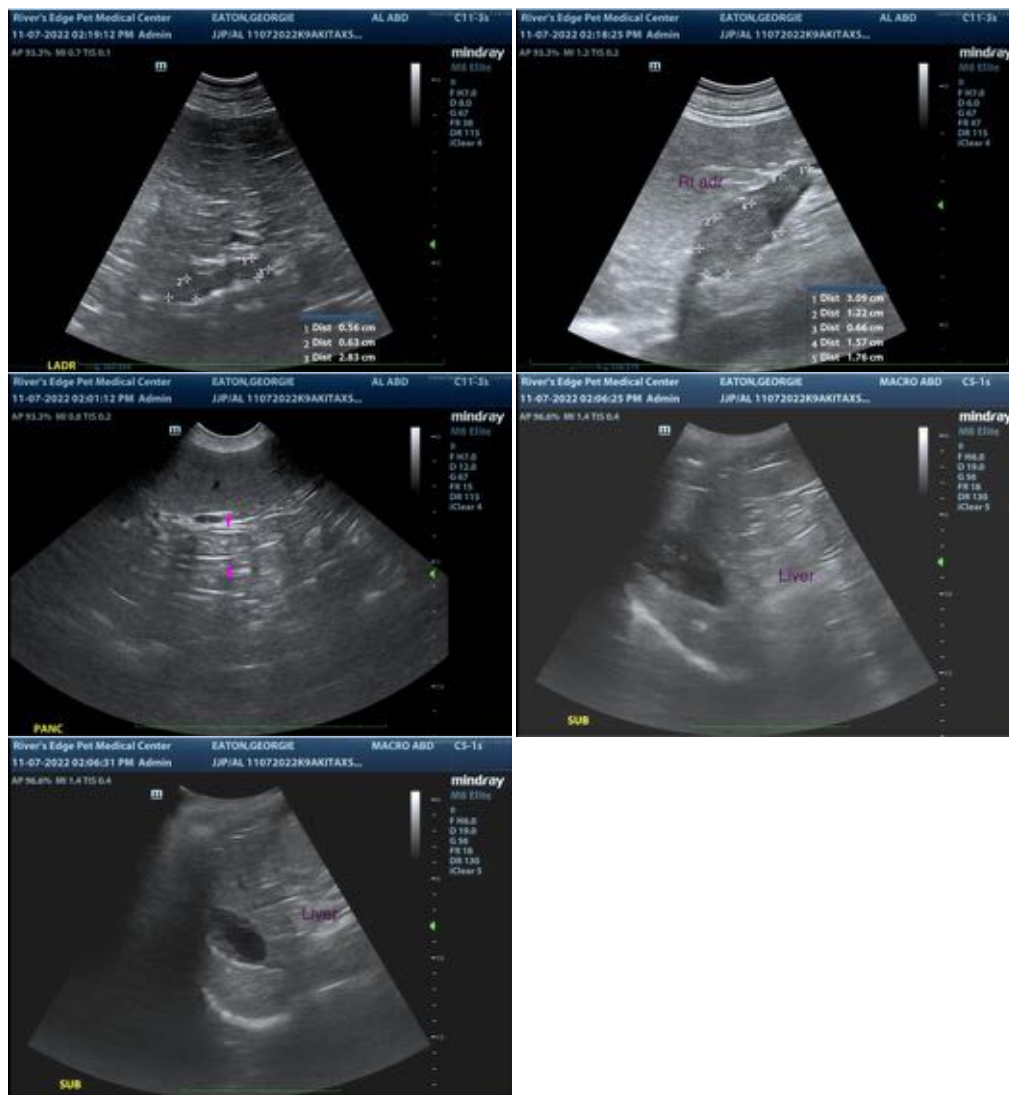
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Andrea Nicastro, MPH, DVM, Diplomate DACVIM (Small Animal Internal Medicine)  
info@SonoPath.com



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