



## PATIENT

Grizzle Leroux

## SPECIES

Canine

## BREED

Jack Russell Mix

## SEX

Neutered Male

## AGE

10 Years

## WEIGHT

17.2 Pounds

## INTERPRETED BY

Andrea Nicastro, DVM,  
Diplomate ACVIM  
(Small Animal Internal)

## IMAGING PERFORMED BY

Loetitia Saint-Jacques, RVT

## HOSPITAL NAME

Mountain View AH

## REFERRING VET

Dr. Sarah Kalivoda

## INVOICE

13756

## DATE

2/3/22

## PRESENTING CLINICAL SIGNS

History: Chief Concern / Provisional Diagnosis: ~~ elevated ALT and bile acids Relevant Medical History and Physical Exam findings: ~~ Asymptomatic for liver disease. Recent Diagnostics: Relevant Laboratory Results / Abnormalities: ~~ cbc wnl, TP 5.4 (5.5-7.5), Alb 2.6 (2.7-3.9), ALT 215 (18-121), Chol 128 (131-345) aPTT 92s (60-93s) PT 12s (11-14s) Current medications (include full name, dosage and frequency): ~~ Denamarin

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### Urinary System

The urinary bladder, trigone, and pelvic urethra are normal in thickness and the mucosal surface is smooth. The bladder is moderately distended. A scant amount of echogenic debris is suspended within the lumen. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

The prostate is normal in size (0.84 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

The left kidney presented normal size (4.83 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is mildly thickened and there is mild to moderate loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis.

The right kidney is normal size (3.93 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is mildly thickened and there is mild to moderate loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis.

### Adrenal Glands

The left adrenal gland is borderline enlarged in size (0.43 cm at cranial pole) (0.57 cm at caudal pole) (1.69 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 mildly enlarged (0.55 cm at cranial pole) (0.65 cm at caudal pole) (2.15 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.

### Spleen

The spleen is normal in size (1.21 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



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The liver is subjectively normal in size with normal contours and structure. There is appropriate echogenicity and echotexture. No overt structural evidence of inflammatory, infiltrative or regenerative pathology is evident. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed. The portal vein the caudal vena cava ratio is approximately 1:1.

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The gall bladder lumen is moderately distended. The wall is normal in thickness. A small polyp-like lesion is observed along the luminal surface. Luminal contents are anechoic. The cystic and common bile ducts are normal/not seen.

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**Gastrointestinal**

The gastric lumen is mildly fluid distended and hypomotile. Some of the gastric wall is thickened (up to 0.84 cm) with apparent retention of the normal layering pattern. The gastric wall in the region of the fundus appears normal thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is segmentally dilated with chyme and gas. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. The colonic wall is normal. There is no evidence of an obstructive pattern.

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**Pancreas**

The right limb of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

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**Free Abdomen**

There is no evidence of free fluid. A 0.60 cm cranial abdominal lymph node is visualized. In addition, a few prominent mesenteric lymph nodes are seen, the largest measuring 0.90 cm in length.

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**ULTRASONOGRAPHIC FINDINGS**

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**Primary Findings**

- An obvious cause for the elevated liver enzymes is not identified in the study. However, a microscopic hepatopathy (i.e., bacterial cholangiohepatitis, Leptospirosis, chronic active hepatitis, copper-associated hepatotoxicity, infiltrative neoplasia (less likely)) should be considered.
- The gastric wall changes are most consistent gastritis. However, emerging neoplasia cannot be excluded. A gastric ileus is present.

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**Secondary Findings**

- The lymph node changes are most consistent with reactive lymphadenitis or lymphoid hyperplasia.

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- Mild bilateral adrenomegaly

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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Neutered Male

- Consider Leptospirosis testing (i.e., blood and urine PCR, serology), particularly if the liver enzyme elevations are acute in nature. If hepatic cytology results are inconclusive, a surgical liver biopsy with aerobic and anaerobic bile cultures and acquisition of additional hepatic tissue samples for possible copper quantitation may be necessary to get a definitive diagnosis. While awaiting test results, consider empirical treatment for bacterial cholangiohepatitis with broad spectrum antibiotics and hepatic antioxidants.
- Regarding the gastric wall changes, consider a fine needle aspirate of the thickened portion of gastric wall. Alternatively, consider a repeat ultrasound in 2-3 weeks to assess for progression. If surgery is pursued, to obtain liver biopsies, gastric wall biopsies should also be acquired. Three-view thoracic radiographs should be performed prior to anesthesia to evaluate cardiopulmonary status.

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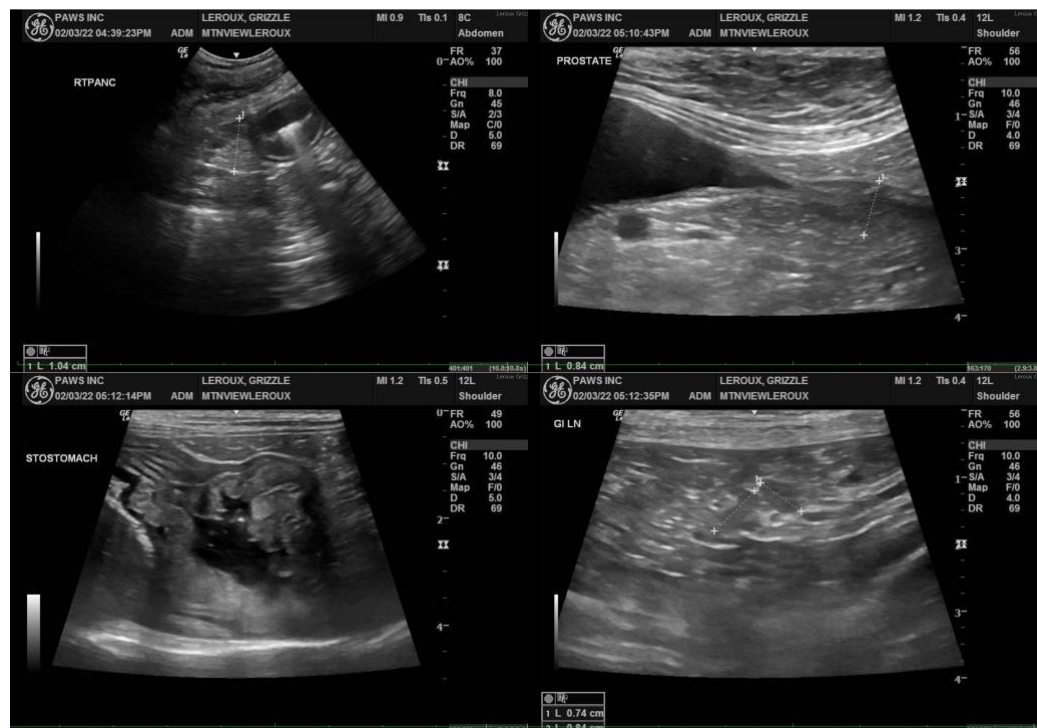
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Portable Animal Wound Sonography, Inc.

IMAGING PERFORMED BY  
pawsonography@gmail.com 530-786-8340

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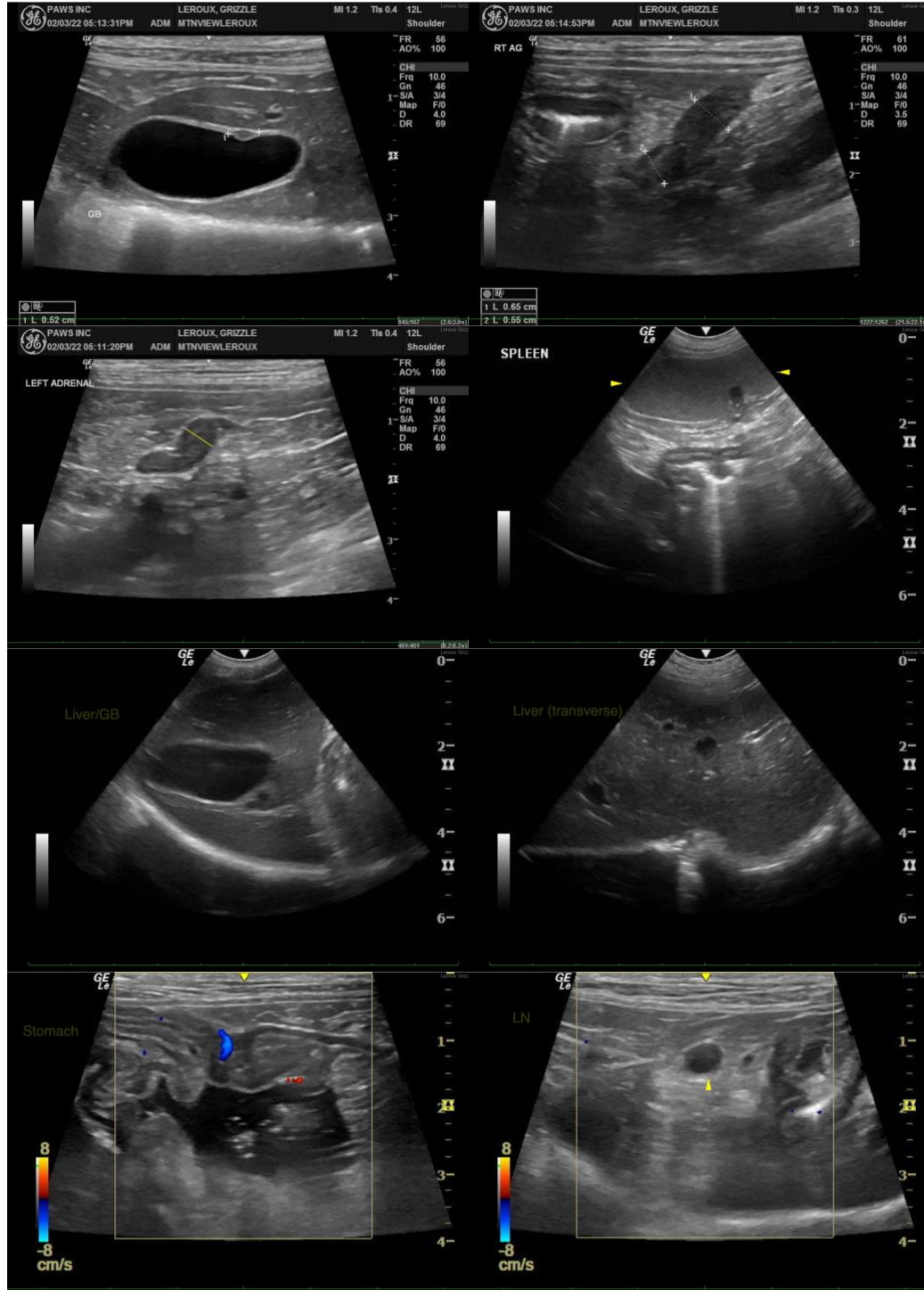
Dr. Sarah Kalivoda

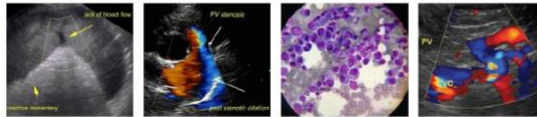
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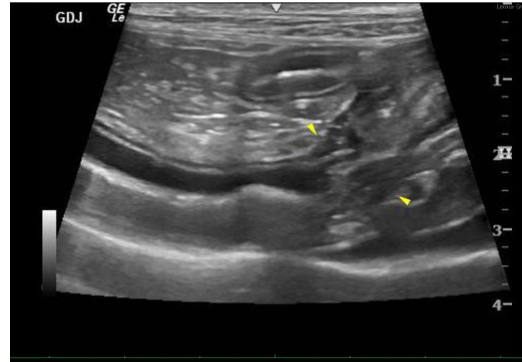
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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, DVM, Diplomate ACVIM (*Small Animal Internal Medicine*)

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