



**PATIENT**

Daisy Mersfelder

**SPECIES**

Canine

**BREED**

Aussiedoodle

**SEX**

Spayed Female

**AGE**

9 Years

**WEIGHT**

19.8 Pounds

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Dr. Scott

**HOSPITAL NAME**

Ho Ho Kus VH

**REFERRING VET**

Dr. G

**INVOICE**

18193

**DATE**

11/22/22

**PRESENTING CLINICAL SIGNS**

History: Initially dog diagnosed with Lepto and and pulmonary mass on 11/4 at VEG. Took pet home to prepare to euthanize but pet started doing really well. There were multiple lepto tests done with different results. Pet was sent home on doxycycline while waiting for Lepto results. Pet doing really well clinically on doxycycline. Most recent Lepto PCR negative on blood and urine but Chem showed high liver values.

Abnormal PE/Chem/CBC/UA Results: ALT 3,000, ALP 2,000, T bili 13, rest of chem WNL

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

Urinary bladder is only mildly distended (empty). Visible contents are anechoic. Urinary bladder wall is unable to be fully assessed for pathology without further distension. No visible masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface.

If there are urinary signs and/or concern for urinary bladder pathology, reassessment after complete filling is recommended.

Left kidney is normal is size (4.3 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present.

Right kidney is normal is size (4.7 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present.

**Adrenal Glands**

Left adrenal gland is normal in size (0.46 cm at cranial pole and 0.64 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

The area of the right adrenal gland is examined, the caudal pole is well visualized and is normal, measuring 0.48 cm thick. The cranial pole is difficult to fully visualize.

**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). Several small 0.5 cm - 0.6 cm, non-capsule-disrupting hypoechoic nodules are noted. Splenic vasculature appears normal.

**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.



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Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. 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 empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

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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.

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The visible colon is normal in wall thickness and layering. Contents are consistent with normal formed feces and gas.

**Pancreas**

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The observed pancreas 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.

**WEIGHT**

19.8 Pounds

**Free Abdomen**

There is no evidence of peritoneal effusion. There is no apparent lymphadenopathy.

**ULTRASONOGRAPHIC FINDINGS**

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**Primary Findings**

- Medullary rim sign - This finding is of unknown clinical significance and can be a normal variant, often idiopathic. Medullary rim sign can be present with renal disease including FIP, lymphoma, hypercalcemic nephropathy, Leptospirosis, tubular disease, other and should be interpreted in combination with other more specific indications of kidney disease such as isosthenuria, proteinuria, azotemia, etc. This is a common incidental finding in patients with diabetes mellitus.

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**Secondary Findings**

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- Gallbladder debris (canine) - 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 Tbil.

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- Hypo to anechoic splenic nodules - likely represent benign lesions such as a cysts, hematomas, nodular hyperplasia, extramedullary hematopoiesis, etc., however while considered less likely, infiltrative neoplasia can mimic benign lesions, and cannot be ruled out.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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If this patients PCR was negative while receiving antibiotics, recommendations are to further evaluate Leptospirosis status using serology and potentially convalescent titers. If these liver enzymes are



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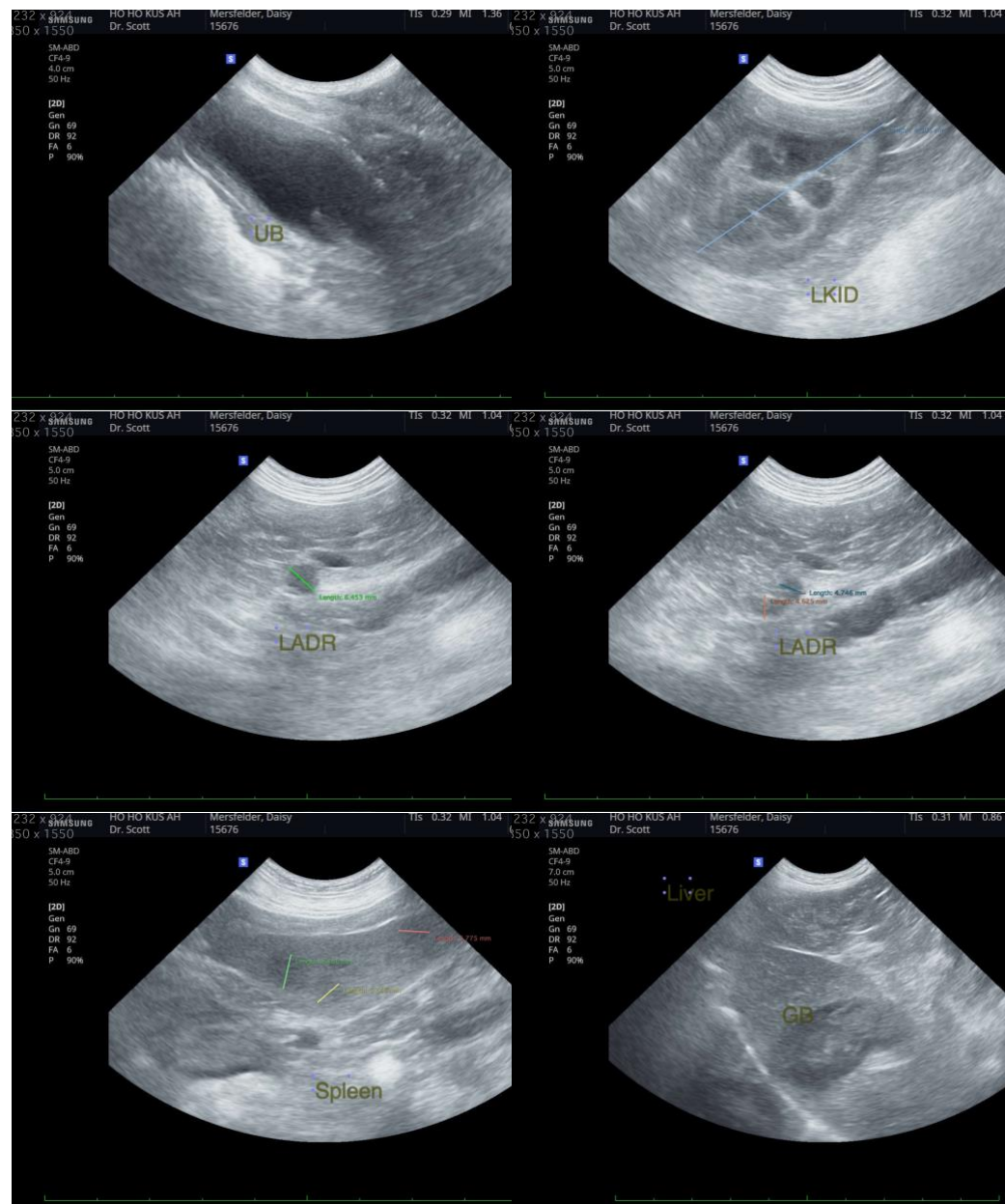
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improving, it could all still be related to Leptospirosis. If they are progressing or if original liver enzyme evaluation is unknown, further investigation of additional causes of a hepatopathy is recommended beginning with a fine needle aspirate of the liver if patients coagulation status is appropriate. Additionally, doxycycline can cause an idiosyncratic hepatopathy, so if lepto serology is consistent with resolution, doxycycline should be discontinued and empirical hepatic nutraceutical therapy is recommended.

While the splenic pathology trends toward benign in appearance, if a fine needle aspirate of the liver is obtained, a fine needle aspirate of the spleen at the same time could be considered. Additionally, if not recently evaluated, urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.





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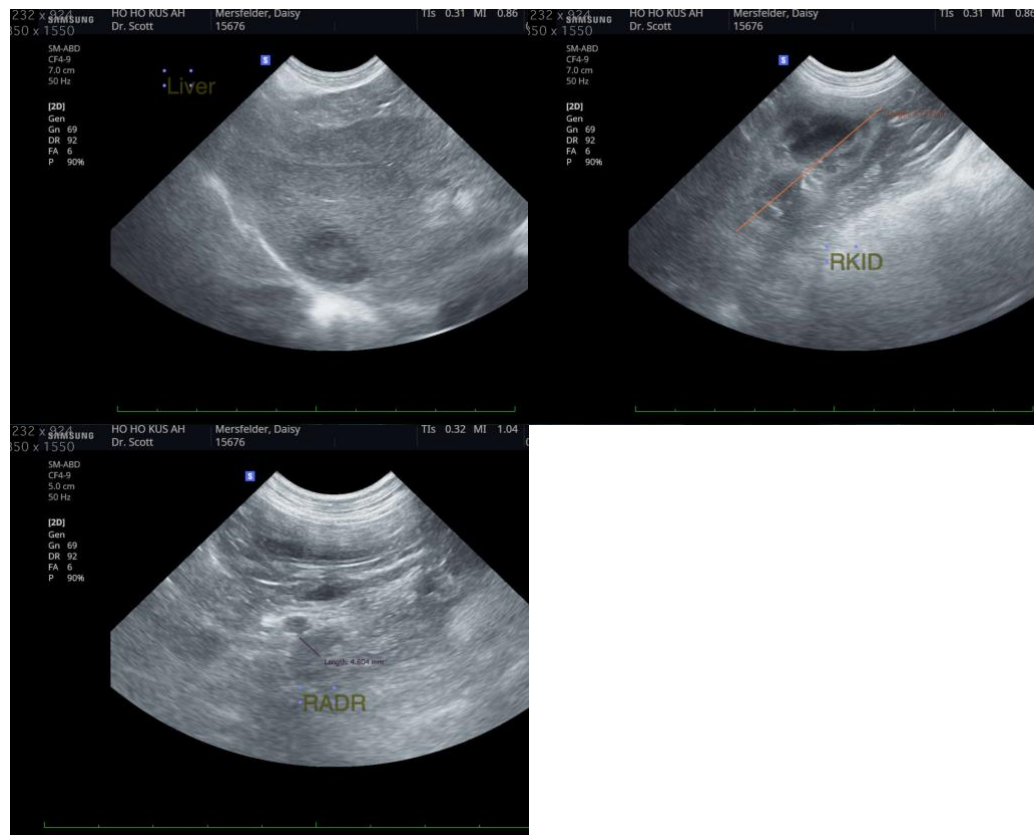
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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**Beth Johnson, DVM DACVIM**

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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.