


**PATIENT PRESENTING CLINICAL SIGNS**

Raven Agenten

History: Raven presented to WVRC on 4/14/2022 as a transfer for a further work-up for thrombocytopenia and azotemia. Raven has been hyporexic and ADR for the last 3 weeks. She is urinating and defecating normally. She is drinking normally, and her activity level is decreased. She has lost 5 pounds within the recent history. Medical History: -Raven's littermate died at age 8 yo of Leukemia -Had pneumonia/pyothorax as puppy

**SPECIES**

Canine

**BREED**

Doberman Pinscher

**SEX**

Intact Female

**AGE**

10 Years

**WEIGHT**

61.5 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Kim Liedberg

**HOSPITAL NAME**

SVS Imaging WI

**REFERRING VET**

WVRC-Dr. Bianco

**INVOICE**

14733

**DATE**

4/15/22

Abnormal PE/Chem/CBC/UA Results: pDVM Recent History: 4/14/22: CBC-RBC 4.42 (L), HCT 37 (L), HGB 12.4 (L), MCV 83.7 (H), MCH 28.1 (H), MPV 15.9 (H), PLT 6 k (confirmed on blood smear) Chem - SDMA 34 (H), Cre 1.9 (H), BUN 71 (H), TP 5.2 (L), ALB 2.1 (L), ALT 356 (H), ALP 16 (L), TBILI 1.2 (H) Treatment - 100 ml/hr IVF (0.9% NaCl) 4/13/22: RBC 4.88 (L), MCV 83.6 (H), MCH 28.3 (H), MPV 15.9 (H), PCT 0.02 (L), PLT 15k Manual Platelet Count - 15k, 19.5 k, 29k (no clumping) Chem - SDMA 32 (H), Cre 1.9 (H), BUN 73 (H), TP 5 (L), ALT 277 (H) Treatments: NaCl IVF 1130 ml total over 9 hours (126 ml/hr) Cerenia 30 mg PO @ 9 am Temp @ 12pm: 99.6 F Temp @ 6 pm: 98.7 F Started Yunnan Baiyao 2 capsules PO q12 Started Doxycycline 300 mg PO q12 4/12/22: 4dx - Lyme: faint positive, Anaplasmosis: strong positive CBC - RBC 5.48 (L), MCV 83 (H), MCH 28.3 (H), MPV 16.5 (H), PCT 0.01 (L) Manual Platelet Count - Chem - SDMA 31 (H), Cre 2 (H), BUN 85 (H), ALT 296 (H) UA - USG 1.030, WBC 11/hpf, RBC 10/hpf, suspected cocci present, pH 6.0, 500 mg/dL protein Treatment - Started on Clavamox 375 mg PO q12 1/3/22: Growths removed on RH and LF. Histopathology revealed features consistent with multifocal, palisading granulomas localized to the panniculus. No FB or infectious organisms seen. Neoplastic features not seen. 11/24/22: Lump noticed on left and right forelimbs. Occasional cough. On Carprofen PRN . u/d normally. Right and left forelimbs have small growths running up/down arms/carpal areas. FNA of forelimb bumps show degenerate neutrophils, reactive lymphocytes, plasma cells. LH 1 cm raised firm growth, FNA showed plasma cell tumor. On Doxycycline 100 mg BID for possible infectious etiology. CXR - Reveal bronchiograms consistent with age. VHS 20.5 (?). Started on Standard Process Cardiac support for possible underlying heart disease. 11/15/21: CBC - MCV 87 (H), MCH 31.5 (H), Retic HGB 32 (H), PLT 138 (L), platelet clumps on manual smear 4dx - Lyme and Anaplasma positive, treated with doxycycline 300 mg PO q12 for 28 days T4 - 0 1.2 (N) Chem - Na 153 (H), ALT 192 (H) SDMA - 12 (N) 6/8/21: 4dx - lyme and anaplasma positive 12/11/20: ALT 41 (N) 4dx - Lyme and anaplasma + Quant C6 - 29 (considered clinically insignificant) Treated w/ Doxycycline 200 mg PO q12 6/10/20: SDMA 21 (H)

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**
**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and minor loss of corticomedullary border demarcation, expected for the age of the patient. No evidence of pyelectasia or evidence of retroperitoneal inflammation present. The left kidney measured 6.8 cm in length. The right kidney measured 7.4 cm in length.

**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.53 cm width at the caudal pole and 0.53 cm width at the cranial pole.

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.58 cm width at the caudal pole.



**PATIENT**

***Spleen***

Raven Agenten

The spleen exhibited subjective mild enlargement and maintained symmetrical capsule contour. Normal splenic parenchyma echogenicity, exhibiting moderate coarse echotexture and mild parenchyma heterogeneity. Splenic vascularity was normal. No masses or nodules were noted.

**SPECIES**

Canine

***Liver***

The liver presented normal in size. The hepatic parenchyma revealed mildly reduced echogenicity compared to the spleen and renal cortical parenchyma with a mild coarse echotexture. Mild increased portal vein prominence was evident. The capsule of the liver was normal in margination. Distinct masses or nodules were not evident. The hepatic and portal vasculature were normal in appearance.

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Doberman Pinscher

**SEX**

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The gallbladder was mildly distended, likely secondary to hyporexia, containing primarily anechoic content with mild nondependent particulate sediment. The cystic duct and common bile ducts were normal without evidence of dilation.

**AGE**

10 Years

***Gastrointestinal***

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction or foreign material. The gastric body wall measured 0.38 cm.

**WEIGHT**

61.5 Pounds

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material. The jejunum wall measured 0.33 cm.

Normal visible colon wall layers were present with apparent formed feces in lumen.

**INTERPRETED BY**

***Pancreas***

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

The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

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***Free Abdomen***

Kim Liedberg

No overt lymphadenopathy or peritoneal effusion was present.

**HOSPITAL NAME**

**ULTRASONOGRAPHIC FINDINGS**

SVS Imaging WI

- Mild age-related kidneys
- Hepatopathy, exhibiting subjective decreased parenchyma echogenicity
- Mild nonspecific splenomegaly

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WVRC-Dr. Bianco

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**INVOICE**

Sonographically, no evidence of significant renal disease or inflammatory criteria with expected minor parenchymal changes with age. The kidneys did not appear to be end-stage. Considerations for potential acute kidney injury or insult may be indicated.

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Although not specific, acute hepatitis (viral, bacterial, leptospirosis, toxin, etc.) or reactive hepatopathy suspected, given the ALT elevation. Considerations for the spleen may include patient variant, hyperplasia, hematopoiesis, incidental splenitis, while the possibility of acute hepatosplenic neoplasia, although thought less likely, cannot be definitively excluded.

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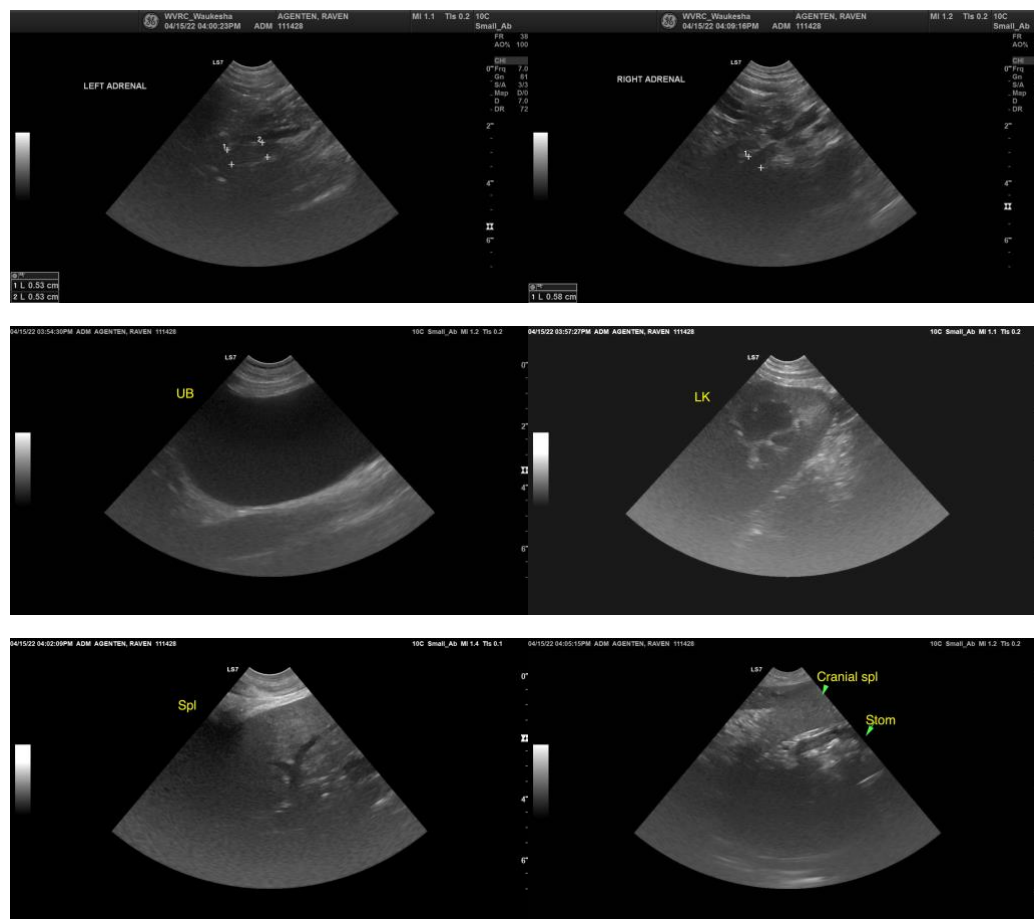
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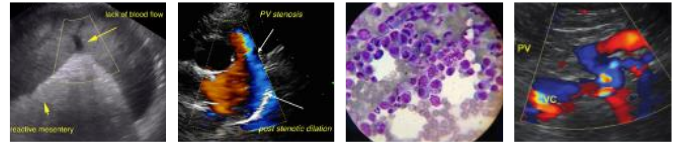
Further assessment may include, assuming normal clotting status yet potentially limited owing to thrombocytopenia, hepatosplenic FNA, using a 25-gauge needle, is likely ideal given this presentation. Leptospirosis titers/PCR could be considered if endemic to the area or potential exposure. A GI panel to include PLI/TLI/Cobalamin/Folate as well as three view chest radiographs and neurological / musculoskeletal examination are recommended to assess for or rule out occult disease which may cause weight loss. Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered.

Empirically, appropriate IV fluids with assessment of renal response, continued gastrointestinal supportive care and appropriate empirical therapy for thrombocytopenia with continued monitoring would be reasonable.

For an additional charge, internal medicine consult can be utilized through SonoPath.com. You can select the internal medicine drop down at <http://spa.sonopath.com/>.

One of the world's top internists & SonoPath associate Dr. Remo Lobetti BVSc, MMedVet, PhD, DECVIM can evaluate your case through SonoPath. <https://sonopath.com/resources/sonopath-services/internal-medicine-teleconsultation-services>





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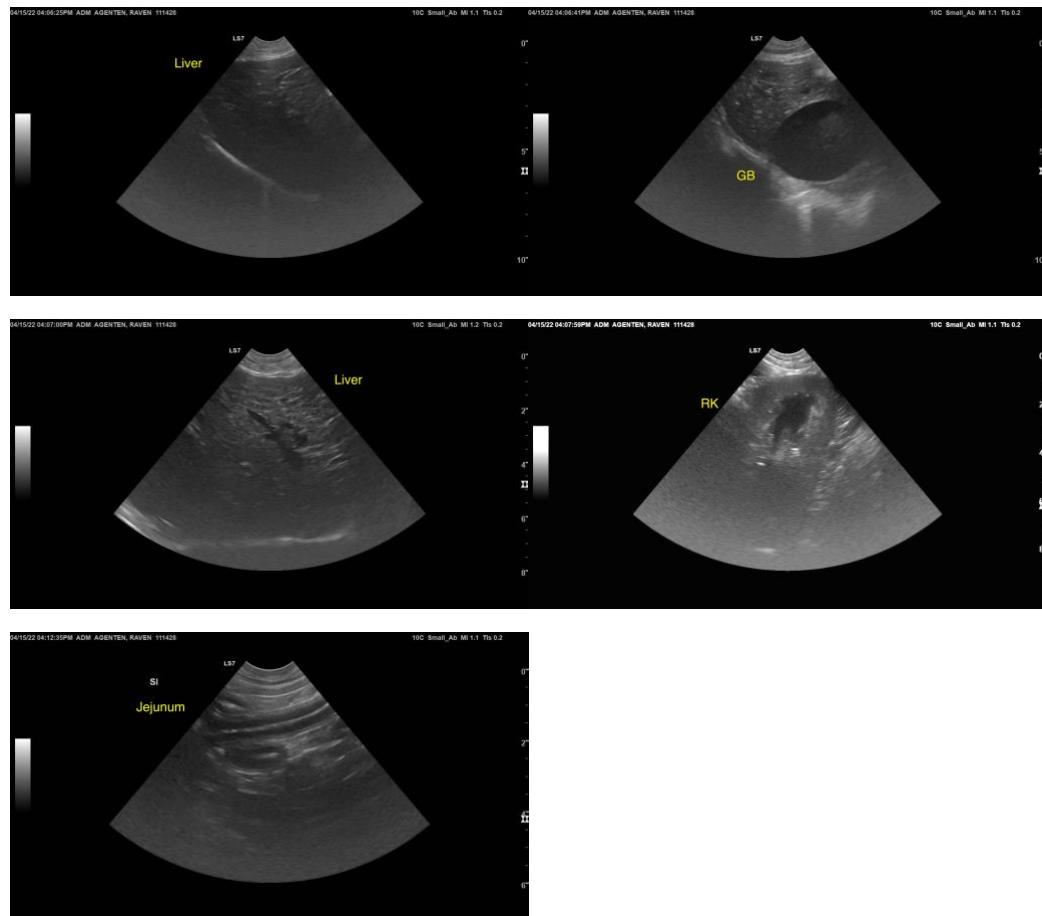
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**The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**  
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