



PATIENT

Skye Wolfe

SPECIES

Canine

BREED

Border Collie

SEX

FS

AGE

14yr

WEIGHT

20kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Patti Mayfield DVM

HOSPITAL NAME

Bend Animal
Emergency and
Specialty Center

REFERRING VET

Patti Mayfield DVM

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DATE

07/23/2022

PRESENTING CLINICAL SIGNS

History: Patient presents for V+ 24/36 hours. Still eating and drinking. Hx of elevated liver enzymes. -HP History of hepatopathy: For ~ 2 years, the LE's have been elevated. Went to specialty center ~ 2.5 years ago when it began, but uncertain if full AUS or other work-up was performed. Supporting with SAME Plus and liver herbs. There was a reported kidney involvement historically, but that seems to have improved. Clients authorize repeat blood work at the time of triage, based upon historical elevations; - May 20, 2022 at primary care DVM * ALB: 4.6 g/dL * ALT: 245 U/L * ALP: 848 U/L * Ca: 12.3 mg/dL (8.6-11.3)

Abnormal PE/Chem/CBC/UA Results: Physical exam: ~5% dehydrated. Anxious. Moderate dental disease and mild ptyalism. Abdomen is slightly tense, but no palpable masses. Several SQ masses (expansive) present on the ventrolateral abdomen consistent with lipomae. Lenticular sclerosis OU. Stiff on ambulation. Diagnostics and Treatments: (7/23/22) 1.) CBC: * Normal erythrogram, HCT: 43% * Normal leucogram, WBC: 6740/uL * Thrombocytosis; PLT: 634,000/uL (148,000-484,000) * PCV/TP: 44%/8.8 g/dL 2.) CHEM-17 * Hypercalcemia, 12.3 mg/dL (7.9-12) * ALT: 2161 U/L (10-125) * ALP: 1759 U/L (23-212) * CHOL: 411 mg/dL (110-320) 3.) IV catheter placed, additional blood obtained for NOVA test (iCa) 4.) Norm R @ Norm R @ 50 mL/hr 5.) Cerenia 1 mg/kg IV (20 mg) 6.) Nova test: * pH: 7.29 (mild acidemia) * Hypercalcemia, iCa: 1.44 mmol/L (1.13-1.42) * Hypermagnesemia, iMg: 0.68 mmol/L (0.47-0.63) * Lactate (likely spurious as sample set on the rocker for ~ 1 hour): 7.2 mmol/L (0.6-3.0)

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with mild dependent mineral/microcalculi. 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 was 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 moderate loss of corticomedullary symmetry and definition expected for the age of the patient. Pinpoint to focal areas of nonobstructive medullary mineral were present. No evidence of pelvic dilation was present. The left kidney measured 6.0 cm in length. The right kidney measured 8.2 cm in length.

The area of the aortic trifurcation was free of pathology.

Adrenal Glands

The left adrenal gland was normal in size, the right adrenal gland exhibited mild prominent size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 2.3 cm length and 0.79 cm width in the caudal pole. The right adrenal gland measured 2.4 cm length and 1.0 cm width in the caudal pole.

Spleen

The spleen exhibited generalized mild parenchyma heterogeneity with multiple nonexpansive well demarcated hyperechoic nodules, an example measuring 1.4 cm in diameter. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis.

Liver



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The liver was mildly enlarged in size with normal structure and symmetrical contour. Generalized mild increased parenchyma echogenicity was present compared to the spleen with a mild coarse echotexture and evidence of parenchymal remodeling. Intermittent small thinly walled cysts containing anechoic fluid were noted. No masses or nodules were observed. The hepatic and portal vasculature were normal in appearance without signs of congestion.

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The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content and mild nondependent to congealed hyperechoic debris in the mid to cranial lumen. No evidence of peripheral gallbladder inflammation was noted. The cystic and common bile ducts were normal.

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Gastrointestinal

The stomach presented intact yet mildly prominent 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 ventral gastric body wall measured 0.38 cm in width.

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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 duodenum measured 0.45 cm in width.

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

Pancreas

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The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

Free Abdomen

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No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

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- Chronic hepatopathy-nonspecific, chronic vacuolar hepatopathy, inflammatory/immune mediated disease, early fibrosis, nodular hyperplasia, hematopoiesis or other hepatopathy possible with neoplastic criteria thought less likely
- Mild gallbladder debris-non mucocele
- Benign splenic nodules-consistent with benign myelolipomas
- Minor pancreatic remodeling-age related/patient variant or potential for chronic to low grade pancreatitis possible
- Overtly normal GI tract, suspect mild gastritis
- Mildly prominent right adrenal gland
- Bilateral chronic renal changes with pinpoint medullary mineral
- Mild dependent urinary bladder mineral

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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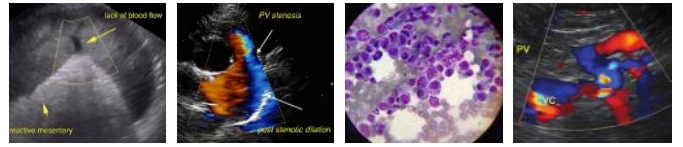
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Further assessment of the liver may include ultrasound guided FNA +/- leptospirosis titer/PCR if clinically indicated. Empirically continued hepatosupportive medications with the addition of Ursodiol may prove beneficial.

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The prominent right adrenal gland is nonspecific with age related or adenomatous adrenal changes suspected. An adrenal workup could be considered if clinically indicated. Monitoring of BP and sonographic monitoring of the right adrenal gland for evidence of progressive enlargement is



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suggested.

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This patient may be passing small amounts of mineral from the kidneys into the urinary bladder. Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered.

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A spec cPL could be considered for further assessment of the pancreas.

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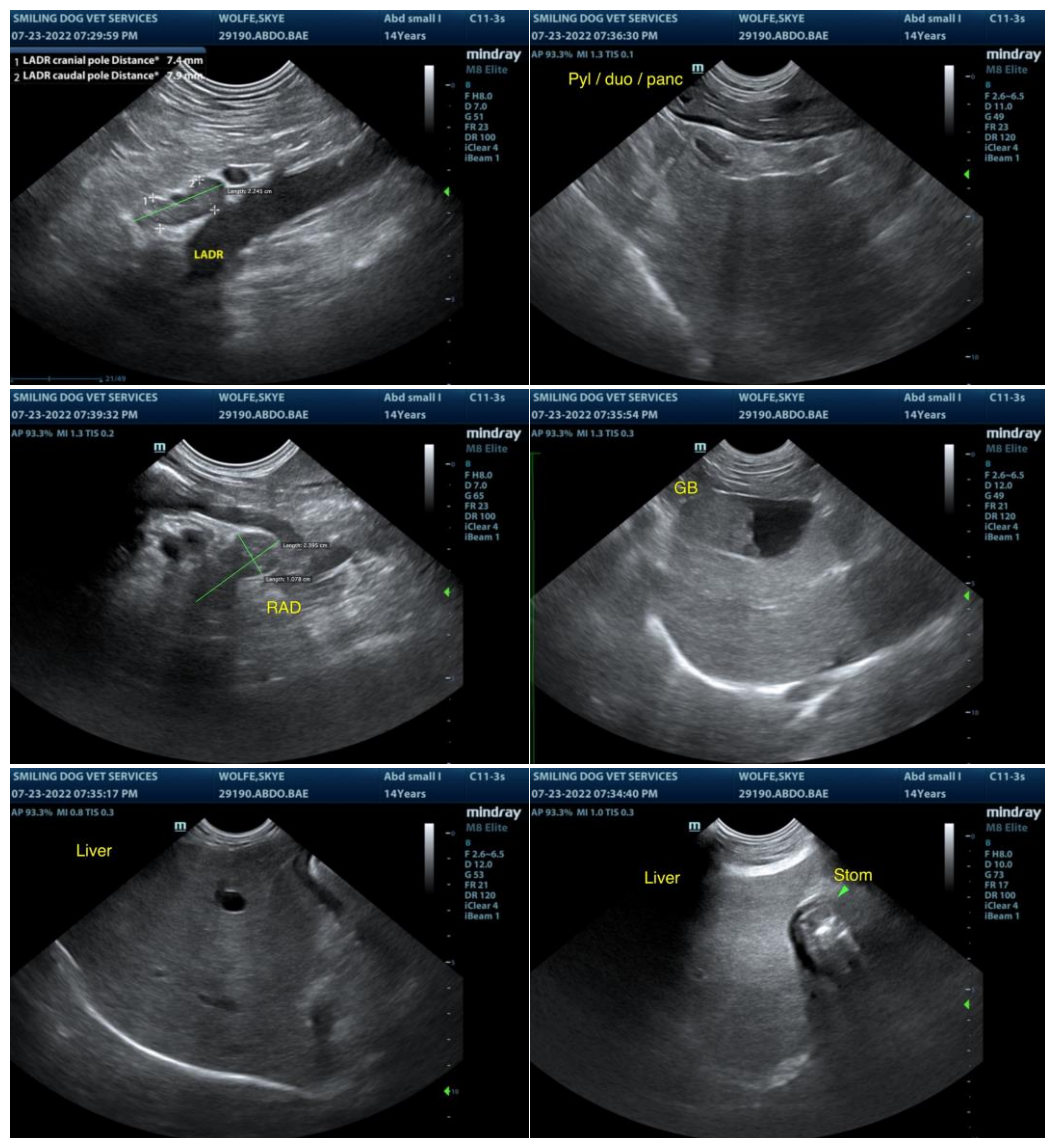
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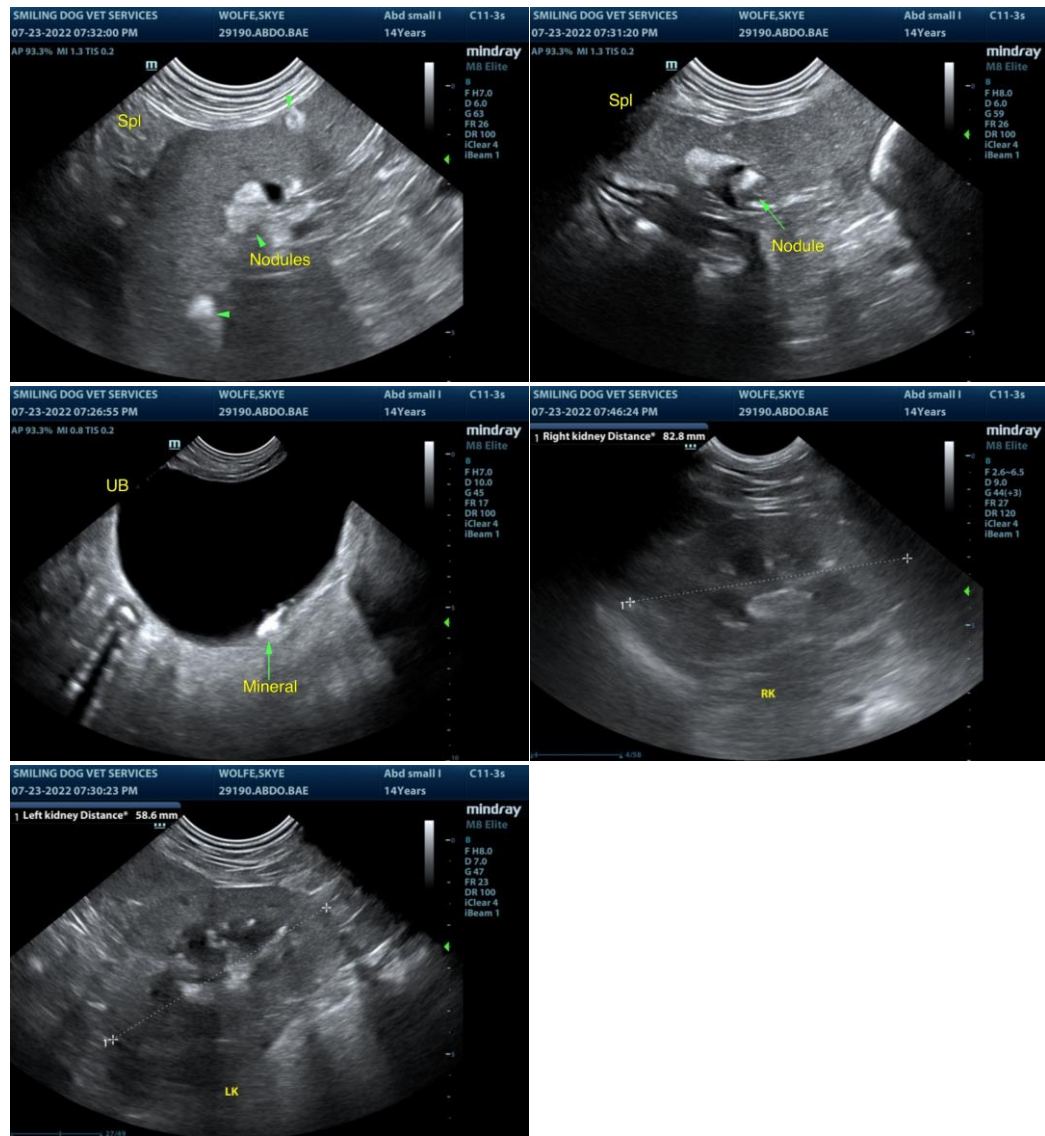
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

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