



**PATIENT**

Zeus Welhoff

**SPECIES**

Canine

**BREED**

Miniature Pinscher

**SEX**

Neutered Male

**AGE**

10 Years

**WEIGHT**

12.5 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Rachel Runnells, RVT

**HOSPITAL NAME**

SVS Imaging KC

**REFERRING VET**

Dr. Oetting

**INVOICE**

14225

**DATE**

3/7/22

**PRESENTING CLINICAL SIGNS**

History: Yesterday unresponsive for ~1 hr, to where O thought pt had passed. When o left the room and came back, Zeus came around. Was drinking excessively for a week, but then returned to normal intake. Vomited clear liquid yesterday. Eating fine until yesterday morning when he became anorexic. Recovered from pancreatitis in Sept 2021.

Abnormal PE/Chem/CBC/UA Results: UA: Glucosuria 1000, Ketones 50, S.G. 1.035. In house cPL hot positive. ALP mildly elevated 294, Amylase >2500, Lipase>6000. Potential Euthyroid sick (T4 0.9), Gluc 354, Cl mildly low at 100, Mild neutrophilia 22.49 and monocytosis 1.53, lymphopenia 1.0, thrombocytosis 637, MPV slight elevation 13.5, Reticulocytosis 111.8, Retic Hgb low at 20.3. Clinically dog was bouncing around totally normal at presentation. Has been on fluids and insulin since yesterday.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 4.0 cm exhibited normal thickness and tone. Minor, nondependent particulate sediment was present. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted. Aortic trifurcation was normal.

The residual prostate was symmetrically normal in size with uniform parenchyma and slight coarse echotexture.

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 mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pyelectasia was present. The left kidney measured 4.3 cm in length. The right kidney measured 4.2 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 0.48 cm width at the caudal pole and 0.67 cm width at the cranial pole.

The right adrenal gland exhibited prominent size to mild subjective enlargement with mild asymmetrical capsule contour with subtle nonhomogeneous parenchyma. No evidence of right adrenal parenchymal mineralization. The right adrenal gland measured 2.7 cm in length x 1.3 cm width at the cranial pole and 0.81 cm width at the cranial pole.

**Spleen**

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. 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. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

**Liver**

The liver exhibited mild generalized enlargement. Mildly nonuniform increased parenchyma echogenicity was present, exhibiting moderate coarse echotexture with intermittent discreet non-expansive hypoechoic parenchymal nodules noted.



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The gallbladder was non distended in size with moderate nonorganized, primarily dependent gallbladder debris. The gallbladder was otherwise normal with no evidence of gallbladder or peripheral inflammation. The cystic duct and common bile ducts were normal without evidence of dilation.

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**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.

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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.

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

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**Pancreas**

The pancreas was prominent in size yet with maintained symmetrical capsule contour. Hypoechoic to mildly nonhomogeneous parenchyma noted. Subtle evidence of mild peripancreatic reactive mesentery noted.

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**Free Abdomen**

No overt lymphadenopathy or free fluid was present.

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**ULTRASONOGRAPHIC FINDINGS**

- Minor urinary bladder sediment
- Mild age-related kidneys, no overt pyelonephritis
- Prominent to mildly irregular right adrenal gland, overtly normal left adrenal gland
- Hepatopathy, exhibiting mild parenchyma hyperechogenicity with intermittent discreet hypoechoic nodules- metabolic/vacuolar/reactive (diabetic) hepatopathy, inflammatory hepatopathy/cholangiohepatitis, lipidosis with discreet areas of hematopoiesis or nodular to regenerative hyperplasia possible. Hepatic neoplasia is considered a less likely differential diagnosis.
- Moderate gallbladder debris (non-mucocele)
- Pancreatitis- subjective mild to moderate active to chronic active pancreatitis

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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Urine culture and sensitivity on sterile urine sample recommended given the glucosuria.

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The mildly prominent to irregular right adrenal gland was nonspecific with considerations including functional versus nonfunctional adenomatous change, hyperplasia with potential for emerging neoplasia is considered a less likely differential diagnosis yet cannot be definitively excluded. The most recent urine specific gravity was not overtly consistent with current polyuria/polydipsia yet full adrenal work up could be considered if clinical suspicion for adrenal hyperfunctionality. Ideally, sonographic reassessment of the right adrenal gland, for evidence of progressive enlargement or changes with initial recheck in 4 weeks is suggested.

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Given current clinical presentation, continued empirical therapy for potential diabetes and pancreatitis would be reasonable.



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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/>.

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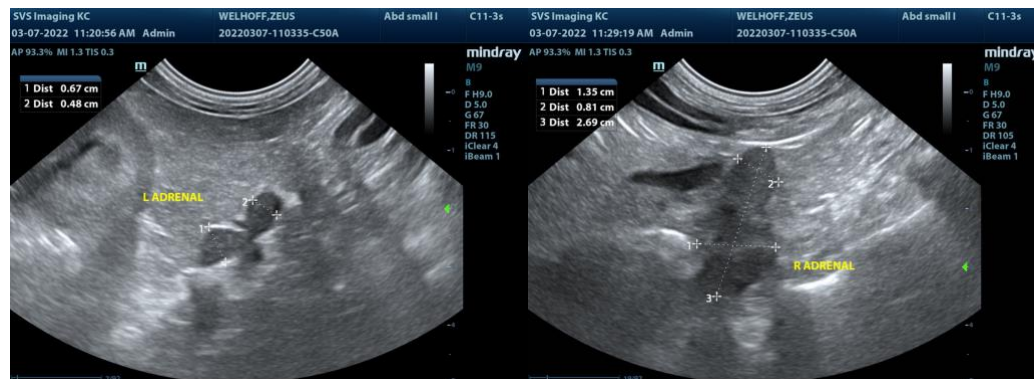
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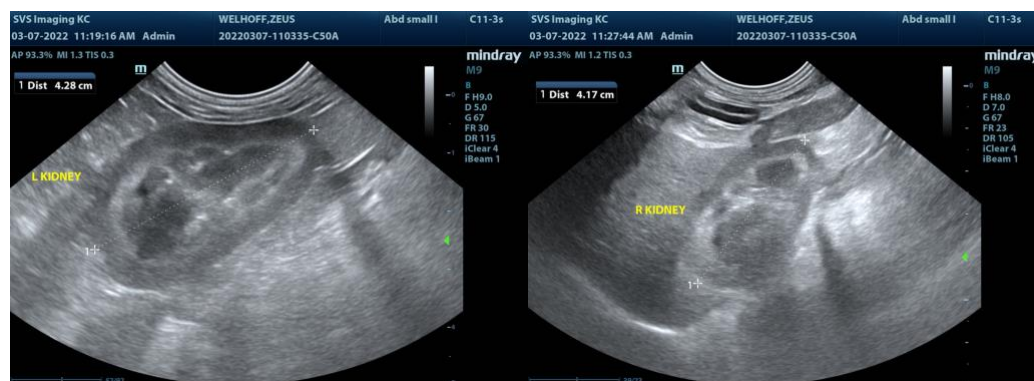
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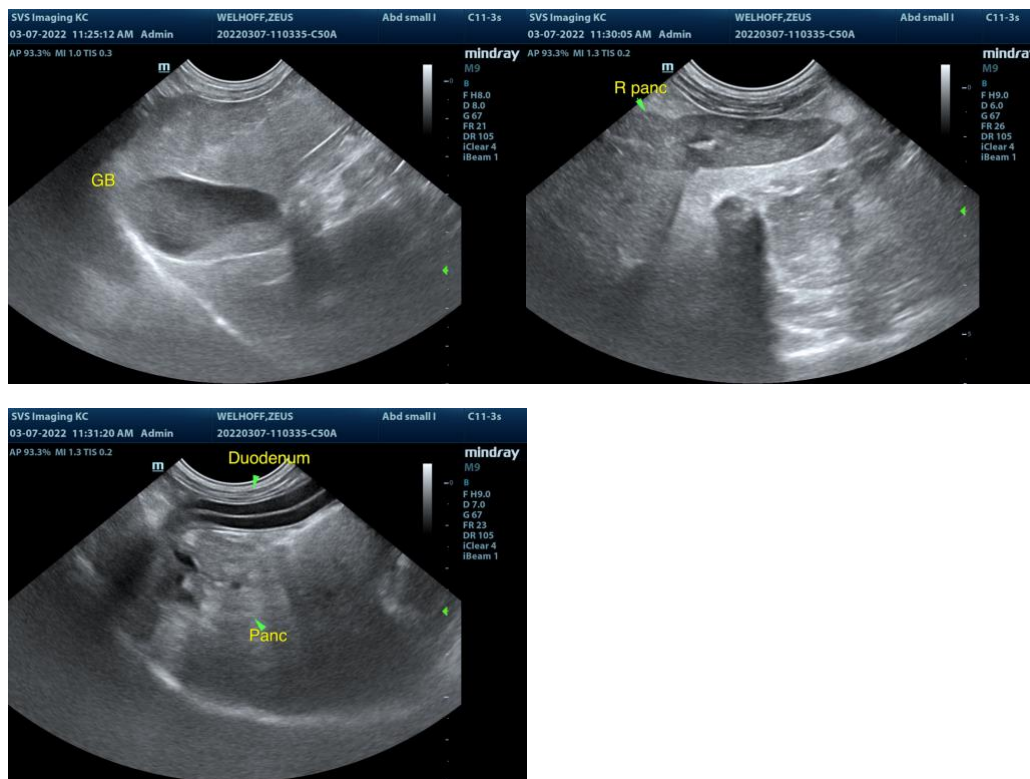
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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