



**PATIENT PRESENTING CLINICAL SIGNS**

Cody Siddall

History: Cody first presented Oct 2021 after owners moved into the area. Had been diagnosed previously with Diabetes 2 months prior and was on Caninsulin 3IU BID and Tacrolimus for KCS and Cosopt for glaucoma. 2022 bilateral enucleation due to blindness and uncontrolled glaucoma.

**SPECIES**

Canine

Diabetes has been difficult to control- have tried Libre discs, BG curves and Fructosamine monitoring- over time insulin has been as high as 8IU BID(1U/kg BID) but while on that dose in May 2023 he had a seizure. Have reduced dose to 6IU BID. On May 30, 2023 he presented after seizure, DVM who saw him that day discussed with owners and it seemed to be a true seizure. Heart sounds were very normal. No rads taken.

**BREED**

BichonXPoodle

Abnormal PE/Chem/CBC/UA Results: Feb 2023 - BG 32, ALP 232(5-160) Na 141(142-152)K normal, CL 97(108-119) May 30,23 BG 37, ALT 728 ALP 372(23-212) Na 140(144-160) K normal, CL 104(109-122) May 31, 23 Bile acids preprandial 4.0(0-14.9)Postprandial 69(0-29.9)

**SEX**

Neutered Male

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**AGE**

9 Years

**Urinary System**

Urinary bladder is adequately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

**WEIGHT**

8.3 kg

Prostate is normal in size, echotexture and echogenicity for a neutered male.

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

Left kidney is normal is size (5.31 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.

**IMAGING**

**PERFORMED BY**

Crystal Hill

Right kidney is normal is size (5.10 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.

**HOSPITAL NAME**

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**Adrenal Glands**

Left adrenal gland is normal in size (1.75 cm long x 0.57 cm at cranial pole and 0.44 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

**REFERRING VET**

Dr. Duschinsky

Right adrenal gland is normal in size (1.86 cm long x 1.31 cm at cranial pole and 0.7 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

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**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). No focal nodules or masses are observed. Splenic vasculature appears normal.

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**Liver**



**PATIENT**

Cody Siddall

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.

**SPECIES**

Canine

Gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

**Gastrointestinal**

**BREED**

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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.

**SEX**

Neutered Male

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.

**AGE**

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

**Pancreas**

**WEIGHT**

8.3 kg

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.

**Free Abdomen**

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

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

**ULTRASONOGRAPHIC FINDINGS**

**IMAGING**

**PERFORMED BY**

Crystal Hill

- 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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- An obvious cause for the reported increased liver enzymes is not identified in these images. Microscopic disease such as Leptospirosis, bacterial cholangiohepatitis, chronic active hepatitis, copper-associated hepatotoxicity, other hepatotoxicity, infiltrative neoplasia (considered unlikely), etc. cannot be definitively ruled out.

**REFERRING VET**

Dr. Duschinsky

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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Testing for Leptospirosis is recommended.

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An empirical course of antibiotics and hepatic nutraceuticals may be tried empirically, with monitoring of ALT for improvement. If improvement is noted, antibiotics should be continued until liver enzymes either normalize or plateau (recheck every 2-3 weeks); however, if improvement is not noted and/or enzyme increase progresses, antibiotics should not be continued long term and liver tissue sampling is recommended.



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FNA of the liver can be performed to assess inflammatory cell type, rule in/out round cell neoplasia, etc. (if patient's coagulation status is appropriate). If round cell neoplasia is not diagnosed, a liver biopsy (including copper level assessment) may be required to definitively diagnose the underlying hepatopathy.

**SPECIES**

Canine

This patients reported seizures are likely secondary to hypoglycemia. The hypoglycemia is likely secondary to higher doses of insulin than the patient needs, however, given the reported bile acid results, decreased liver function could be contributing as well. Although true decreased liver function is considered less likely.

**BREED**

BichonXPoodle

Medical management of decreased liver function +/- concurrent hepatic encephalopathy, etc., could be considered, with monitoring for improvement. Having said that, the primary recommendation is trying to regulate this patients reportedly difficult to regulate diabetes to prevent episodes of hypoglycemia and see if seizures resolve.

**SEX**

Neutered Male

Given this patients complicated variety of contributing factors to clinical signs, consultation with a veterinary internist is recommended.

**AGE**

9 Years

**WEIGHT**

8.3 kg

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Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Woodstock VS

**REFERRING VET**

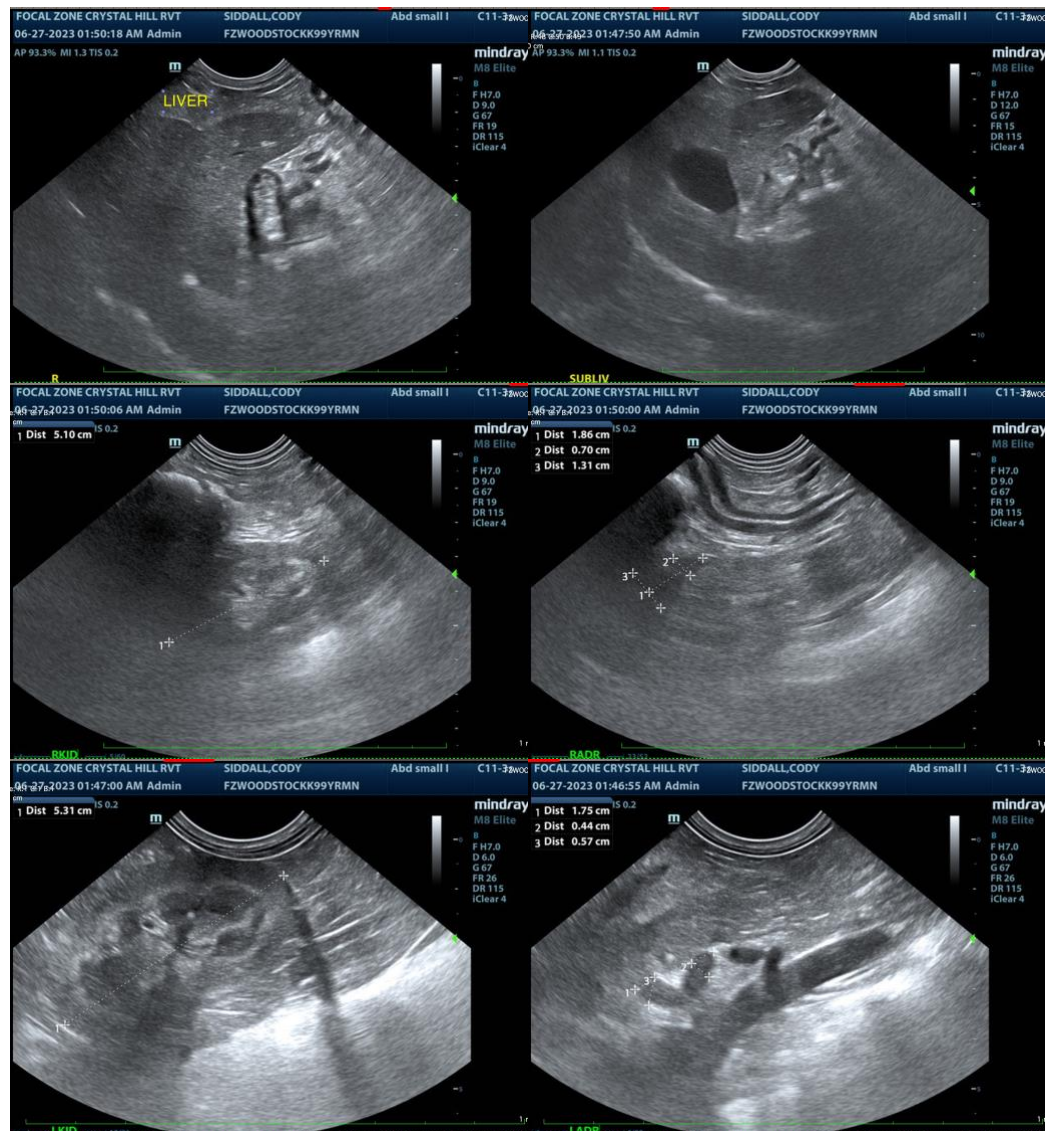
Dr. Duschinsky

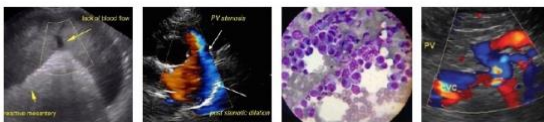
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#### PATIENT

Cody Siddall

**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.**

#### SPECIES

Canine

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.

#### BREED

BichonXPoodle

**Beth Johnson, DVM DACVIM**

[Info@SonoPath.com](mailto:Info@SonoPath.com)

#### SEX

Neutered Male

#### AGE

9 Years

#### WEIGHT

8.3 kg

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