

**DATE PRESENTING CLINICAL SIGNS**

3/10/23 Hx of increased liver enzymes, initial ultrasound report done at Animal Emergency Hospital back in October of 2022. Hepatopathy, acute pancreatitis. Pt is currently doing well. Liver values improving. Owner thinks diarrhea is related to Denamarin (Resolved upon stopping.)

**PATIENT**

Zach Droppelman

Current Medications: Ursidiol 250mg- 1/2 tab SID since October, Denamarin Advanced- 1/2 tab SID. ( Stopped recently)

**SPECIES**

Canine

Lab Results: 10/19/22 -ALT- 325, AKP- 322, GGT-11. 11/2/22- ALT- 280, AKP- 142, GGT- 13. 2/23/23- ALT- 207 (10-125), AKP-79 (23-212), GGT-5 (0-11)

Date of Previous IntraPet Ultrasound: 10/11/22. See attached.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

**BREED**

Shih Tzu

Imaging Performed By: Stephanie Warga RDCS, RVT.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****SEX**

Neutered Male

**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.

**AGE**

9/8/10

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

**WEIGHT**

20.5 Pounds

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present in both kidneys. The left kidney measured 3.92 cm. The right kidney measured 3.81 cm.

**INTERPRETED BY**Beth Johnson, DVM  
DACVIM**HOSPITAL NAME**

Bel Air VH

**Adrenal Glands**

The right adrenal gland is normal in size (1.37 cm long x 0.50 cm at the cranial pole and 0.41 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

**REFERRING VET**

Dr. Stevenson

The left adrenal gland is normal in size (1.78 cm long x 0.59 cm at the cranial pole and 0.55 cm at the caudal pole), shape and contour. A hyperechoic nodule is noted in the cranial pole. Nodule does not disrupt normal shape and/or architecture. Visible surrounding vasculature appears normal.

**INVOICE**

45858

**Spleen**

The 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.

**Liver**

The 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.

Gallbladder is moderately distended with anechoic bile as well as mild 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.

### ***Gastrointestinal***

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). 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.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

### ***Pancreas***

Pancreas is prominent (enlarged) in size and mildly irregular in shape with a slightly undulating contour. Parenchyma is coarse in echotexture and heterogenous to hypoechoic in echogenicity.

### ***Free Abdomen***

There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

## **PRIMARY FINDINGS**

- Chronic active pancreatitis
- **Mild gallbladder debris** – 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 Tbili.

## **SECONDARY FINDINGS**

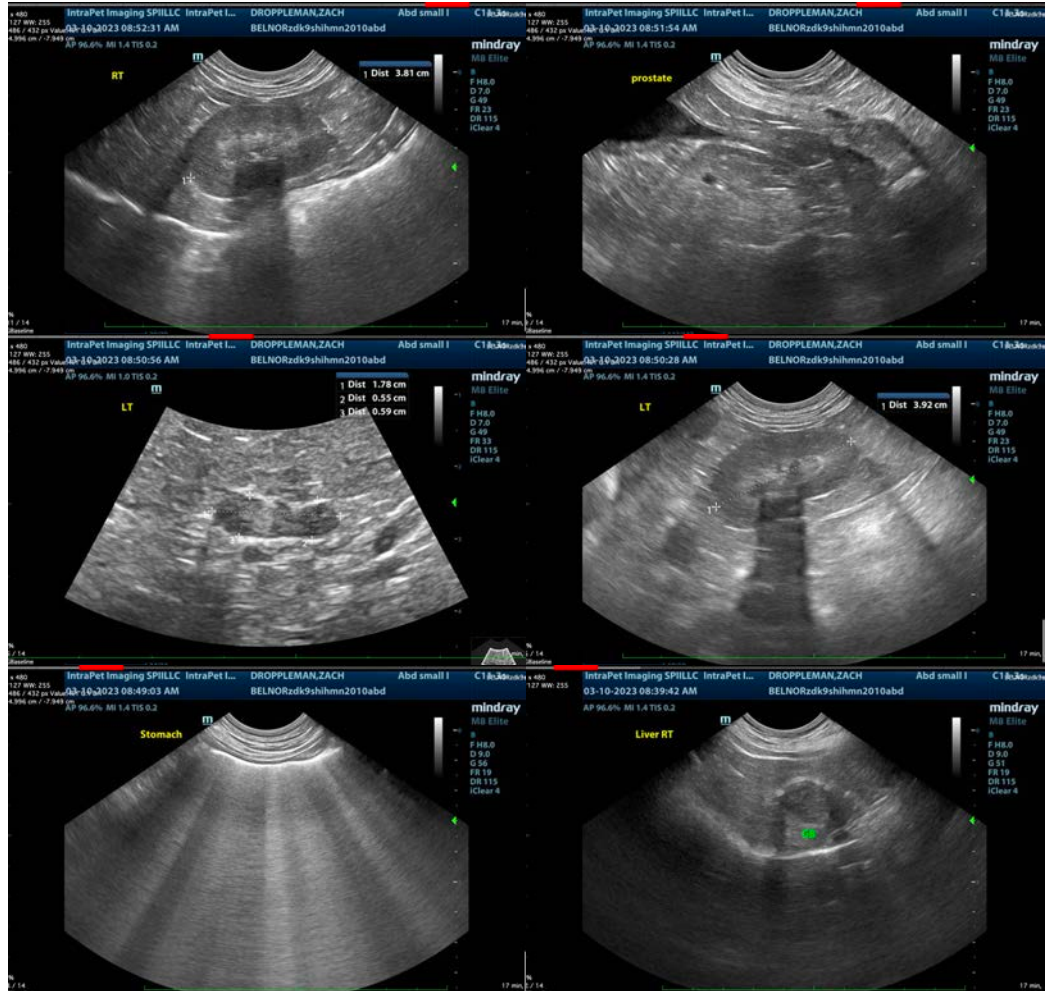
- Age related kidney changes
- **Hyperechoic adrenal nodule (cranial pole left adrenal)** – Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, myelolipoma, adrenal hyperplasia secondary to pituitary disease or metastatic disease. Ultrasound alone cannot differentiate between functional and non-functional nodules and/or between benign and malignant disease. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest adrenal disease) are most often incidental and should be monitored.
- **Bilateral 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.

### INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The appearance of this patient's ultrasound is improved without any visible evidence of active ongoing inflammation. Given the normalization of ALP on Ursodiol, options are either to continue Ursodiol indefinitely (since gallbladder debris is still noted) or discontinue it but monitor enzymes closely for relapse. Beyond that, with the patient doing well and liver enzymes normalizing, additional recommendations/intervention beyond monitoring isn't necessary at this time.





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.

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