

**DATE PRESENTING CLINICAL SIGNS**

12.14.22 Newly elevated liver enzymes found on routine senior annual blood work - ALT 599 (18-121), ALP 4,202 (5-160). Previously normal 2019. No clinical signs noted, healthy senior pet.

**PATIENT**

Cinnamon Harris

Current Medications: None.

Lab Results: ALT 599 (18-121), ALP 4,202 (5-160). Rest of lab-work all wnl. Previously normal 2019.

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

Imaging Performed By: Rachel Brillhart, RDMS.

**SPECIES**

Canine

**BREED**

Dachshund

**SEX**

Spayed Female

**AGE**

1/4/2010

**WEIGHT**

21.2 lbs

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

The urinary bladder wall is normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with anechoic urine. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

The left kidney is normal size (5.63 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with minimal to mild loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

The right kidney is normal size (5.66 cm in length) with a normal shape, smooth peripheral margins, and normal internal architecture. There is mild loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. There is no evidence of pyelectasia, infarcts or hydronephrosis. Renal vasculature is normal.

**INTERPRETED BY**

Andrea Nicastro, DMV,  
Diplomate DACVIM  
(Small Animal  
Internal Medicine)

**Adrenal Glands**

The left adrenal gland is enlarged (1.25 cm at cranial pole) (1.14 cm at caudal pole) (2.83 cm in length) with a slightly irregular shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

**HOSPITAL NAME**

Airpark Animal  
Hospital

The right adrenal gland borderline enlarged (0.91 cm at cranial pole) (0.66 cm at caudal pole) (2.75 cm in length) with a slightly irregular shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

**REFERRING VET**

Dr. Gibson

**Spleen**

The spleen is normal in size (1.14 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. A few small myelolipomas are observed in the region of the hilus. Splenic vasculature is normal.

**INVOICE**

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**Liver**

The liver is subjectively prominent in size with swollen curvilinear peripheral contours. The parenchyma is isoechoic relative to the spleen and exhibits mild heterogeneity. No distinct focal lesions are observed. Hepatic vasculature and biliary tracts are of normal volume with no evidence of congestion.

The gall bladder is distended. The wall is hyperechoic to mineralized and slightly irregular. A moderate to large amount of aggregated, echogenic, partially dependent to suspended sludge is observed within the lumen. The cystic and common bile ducts are normal/not seen.

### ***Gastrointestinal***

The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

### ***Pancreas***

The right limb of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is largely hyperechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

### ***Free Abdomen***

The peritoneal cavity is normal. There is no evidence of inflammation or effusion. The abdominal lymph nodes are normal/not visible.

### ***Other***

A uterine stump is visible (0.47 cm in width). No obvious pathology is observed.

## **ULTRASONOGRAPHIC FINDINGS**

### **Primary Findings**

- The gall bladder wall mineralization (aka “porcelain” gall bladder) is most consistent with cholecystitis. The gall bladder sludge pattern is most consistent with an emerging mucocele.
- Nonspecific diffuse hepatopathy. Differentials include inflammatory disease (i.e., bacterial cholangiohepatitis, chronic hepatitis), Leptospirosis, hepatotoxicosis (i.e., copper), other hepatopathy, +/- concurrent age-related changes (i.e., vacuolar hepatopathy and/or regenerative nodular hyperplasia).

### **Secondary Findings**

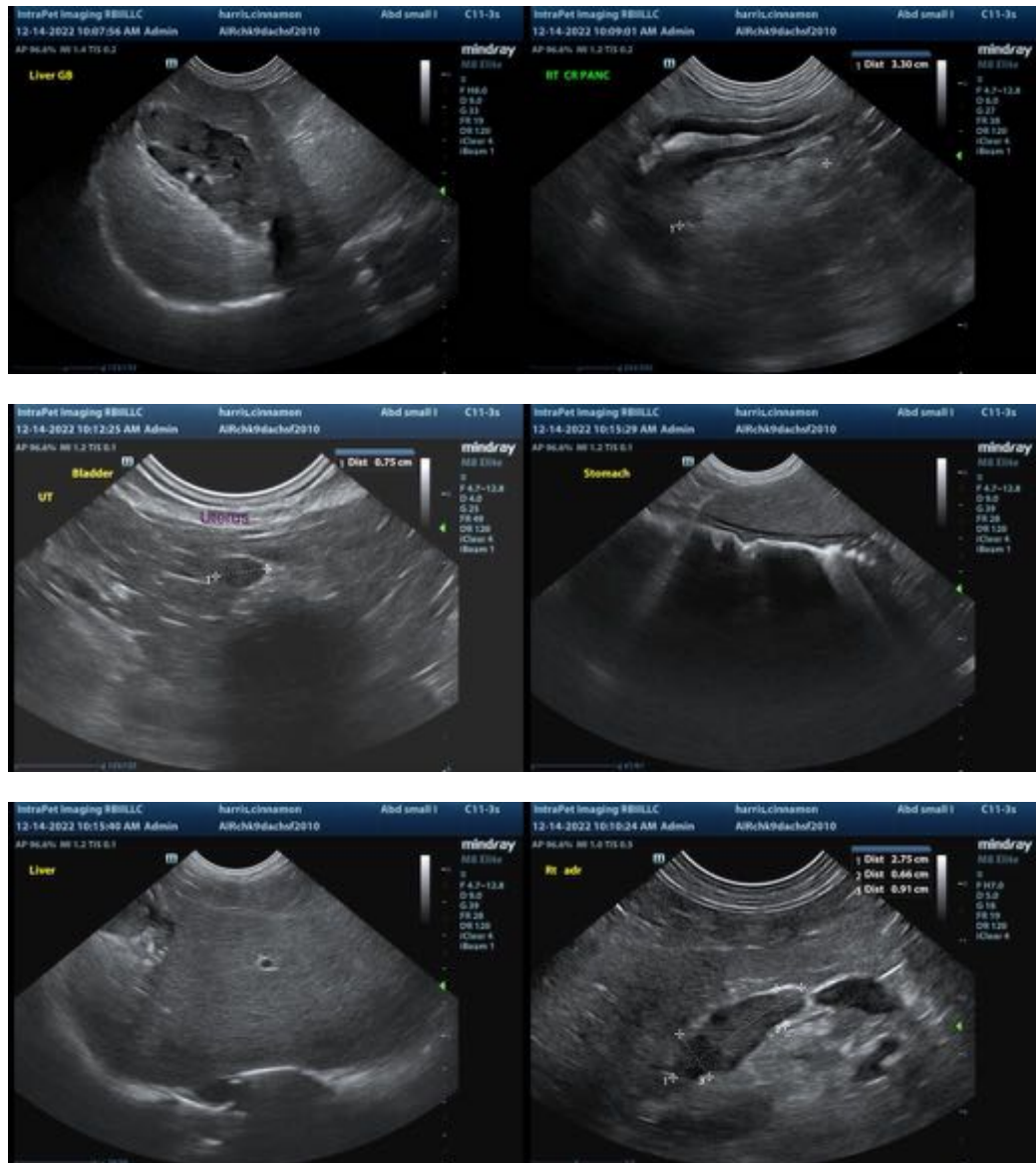
- The bilateral adrenomegaly is most consistent with early hyperplastic change.
- Mild bilateral chronic renal changes
- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Visible uterine stump - incidental

## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

- Given the gall bladder changes, initiation of Ursodiol is recommended, along with serial monitoring (i.e., every 2-3 months) to assess for progression.
- Empirical treatment for cholecystitis (i.e., broad-spectrum antibiotics, Denamarin) can also be considered, given the recent increase in liver enzyme elevations. If liver values do not begin to

improve within 10-14 days of initiating therapy, antibiotics should be discontinued. However, Denamarin and Ursodiol can be continued, if tolerated. If liver values fail to improve, a liver biopsy +/- prophylactic cholecystectomy can be considered.

- Consider testing for hyperadrenocorticism with a low-dose dexamethasone suppression test or ACTH stimulation test if clinical signs (i.e., PU/PD) develop in the future.





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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