

**DATE PRESENTING CLINICAL SIGNS**

1/3/23

Presented 12/1/22 for coughing and syncopal episodes. Diagnosed with CHF and placed on Furosemide and Pimobendan. Baseline BW performed and shows elevated ALT and ALP. Recheck rads 2 weeks later and fluid in lungs cleared. BW recheck revealed similar liver value elevations. Discussed ultrasound to further evaluate the liver.

**PATIENT**

Gaia Henschel

**SPECIES**

Canine

Current Medications: Furosemide 12.5mg BID, Pimobendan 1.25mg PO BID  
 Date of Previous IntraPet Ultrasound: Echo 2/2/2021. See attached.  
 Sedation: Not required to complete full diagnostic ultrasound.  
 Stat Report: Not requested.  
 Imaging Performed By: Rachel Brillhart, RDMS.

**BREED**

Chihuahua

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

Spayed Female

**Urinary System**

The urinary bladder is moderately 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.

**AGE**

10/14/10

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 or infarcts observed. Small non-obstructive nephroliths are noted bilaterally. The right kidney measures 4.84 cm. The left kidney measures 4.71 cm.

**WEIGHT**

15.7 Pounds

**Adrenal Glands**

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The right adrenal gland measures 2.19 cm long x 0.92 cm at the cranial pole and 0.76 cm at the caudal pole. The left adrenal gland measures 2.0 cm long x 0.60 cm at the cranial pole and 0.79 cm at the caudal pole.

**INTERPRETED BY**Beth Johnson, DVM  
DACVIM**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.

**HOSPITAL NAME**All Creatures Vet  
Service**Liver**

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

**REFERRING VET**

Dr. Meadows

**INVOICE**

43873

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**

Diffusely, the stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. Focally, there is a 1.3 cm x 0.75 cm hypoechoic nodule/polyp visualized within the empty stomach. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. 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**

- **Bilateral adrenomegaly** – consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism vs stress or normal variant. Interpret in combination with clinical signs of hyperadrenocorticism.
- **Heterogenous Liver** – These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.
- Chronic active pancreatitis
- Small hypoechoic gastric nodule/polyp, which trends in appearance toward benign. However, infiltrative neoplasia/malignancy cannot be ruled out without tissue sampling.

## **SECONDARY FINDINGS**

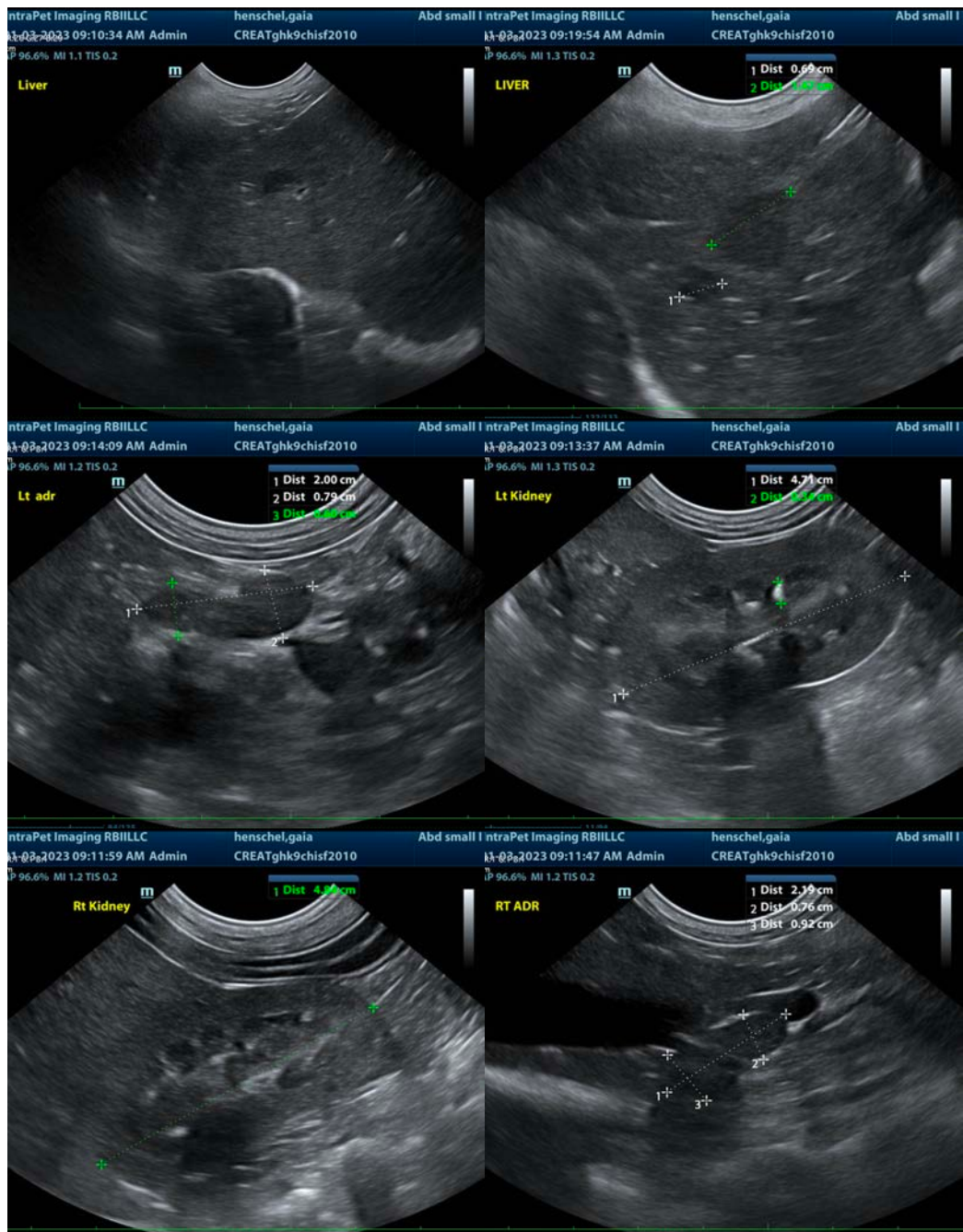
- Age related kidneys with mild/small non-obstructive nephroliths bilaterally
- **Mild gallbladder debris** - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic 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.

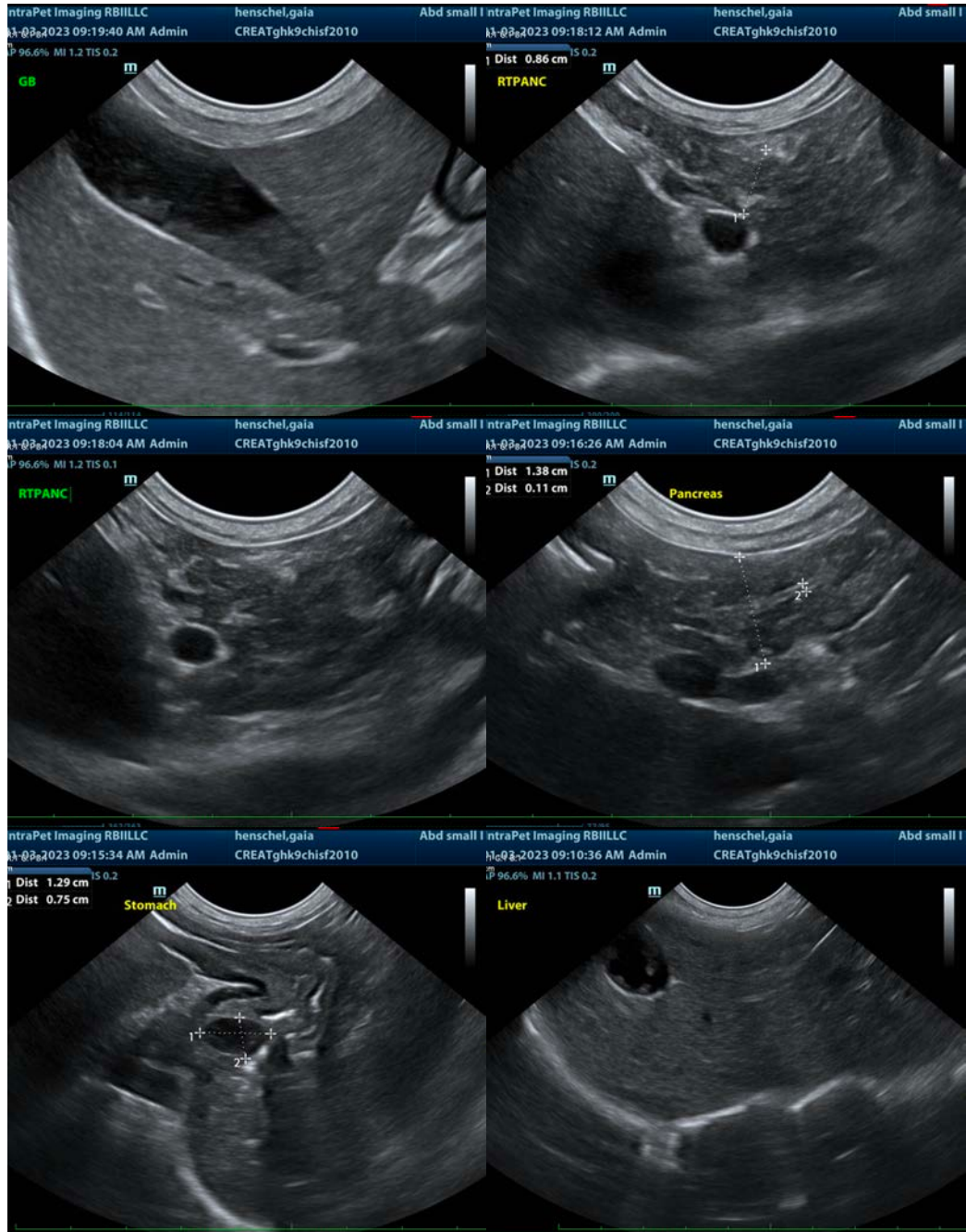
## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The described liver enzyme changes, adrenal gland, liver and gallbladder changes are all suggestive of hyperadrenocorticism. If clinical signs of hyperadrenocorticism, such as polyuria, polydipsia, polyphagia, panting, hair loss, hypertension, etc. are present, testing for hyperadrenocorticism with a LDDS test is warranted. If a LDDS test has been evaluated with a normal result, investigation of possible atypical hyperadrenocorticism with a full ACTH stimulation adrenal panel to the University of Tennessee could be considered. If clinical signs are not present, monitoring is recommended with testing pursued when/if clinical signs develop. Regardless of clinical signs, if not recently evaluated, blood pressure is recommended. If not recently evaluated, a urinalysis and, if indicated based on urinalysis results, urine culture are also

recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

The gastric lesion can be fully evaluated either conservatively with monitoring via a recheck ultrasound of the area in 4-6 weeks, or tissue sampling could be considered with a fine needle aspirate if patient's coagulation status is appropriate and it can be safely reached, or potentially gastroscopy to further visualize and obtain a biopsy.





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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