

**DATE PRESENTING CLINICAL SIGNS**

2/20/23 History: Continued incontinence even on Incurin. Hyposthenuria - R/O Cushing's

**PATIENT**

Lola Layne

Current Medications: Incurin 1 mg SID

Lab Results: 1/19/23 - CBC/Chem 11 - ALKP-883 - increasing; BNP-262 - normal; Dilute urine with an elevated ALKP. Suspicious for Cushing's causing PU/PD and worsening incontinence. 1/26/23 - ACTH TEST RESULTS: Pre-7.4, Post-16.2 - high normal. 2/13 - LDDT RESULTS: LDDS test - Normal. Called owner. Recommend abdominal ultrasound as next step.

**SPECIES**

Canine

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Declined.

**BREED**

Chihuahua Mix

Stat Report: Not requested.

Imaging Performed By: Rachel Brillhart, RDMS.

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

Spayed Female

**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.

**AGE**

8/27/13

Left kidney is normal is size (5.35 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.

**WEIGHT**

28.3 Pounds

Right kidney is normal is size (5.75 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.

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**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 left adrenal gland measures 2.44 cm long x 0.74 cm at cranial pole and 0.75 cm at caudal pole. The right adrenal gland measures 2.13 cm long x 0.93 cm at cranial pole and 0.8 cm at caudal pole.

**HOSPITAL NAME**

Parkville AH

**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.

**REFERRING VET**

Dr. Suter

**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.

**INVOICE**

21214

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**

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is 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. 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 and layering. Contents are consistent with normal formed feces and gas.

### ***Pancreas***

The observed pancreas appears appropriately isoechoic to surrounding omental fat. The capsule is mildly irregular in shape. Parenchyma is mildly heterogenous and coarse. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

### ***Free Abdomen***

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

## **ULTRASONOGRAPHIC FINDINGS**

### **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.

### **Secondary Findings**

- Pancreatic age-related remodeling – Mild irregularities are consistent with benign age-related change. Low-grade smoldering chronic pancreatitis cannot be ruled out and should be suspected in the face of appropriate clinical signs.

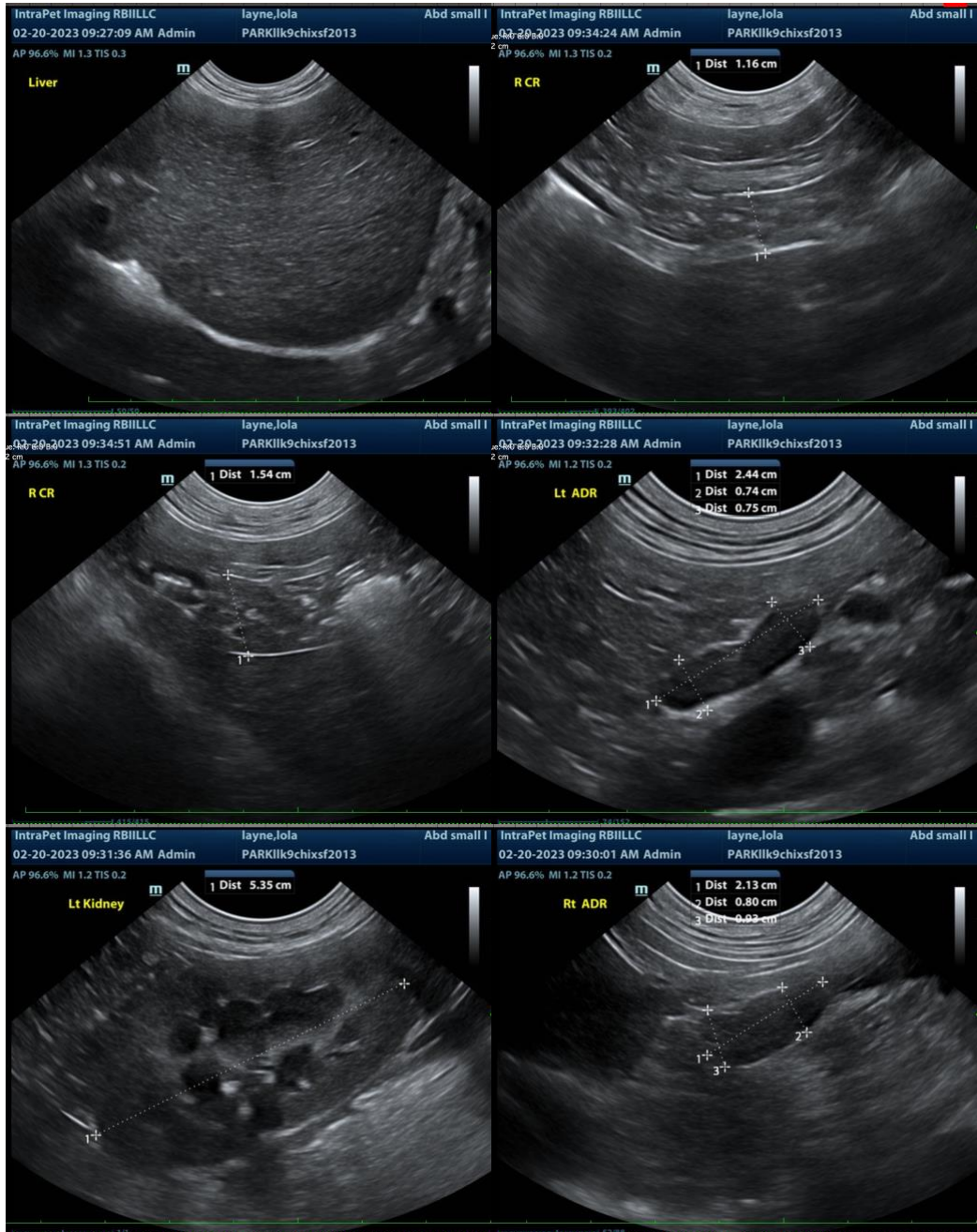
## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Given this patients reported PU/PD, and normal adrenal cortical testing at this point, a urine culture could be considered to rule out urinary tract infection.

Additionally, a blood pressure is recommended if not recently evaluated.

A fine needle aspirate of the liver could be considered if patients coagulation status is appropriate, as could testing for leptospirosis.

Then, if another underlying cause for the PU/PD is not discovered, hyperadrenocorticism, potentially an atypical version, is still a top differential and further testing is recommended in the form of a full adrenal panel, to look for evidence of precursor hormone or sex hormone increases, potentially contributing to clinical signs (submitted to University of Tennessee).





**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.

**Beth Johnson, DVM DACVIM**  
Beth.Johnson@SonoPath.com