

**DATE PRESENTING CLINICAL SIGNS**

8/27/21 History: Polyuria, polydipsia, polyphagia, waking overnight to eat and urinate. Ongoing heart murmur.

**PATIENT**

Bailey Cooke

Current Medications: Recent Lasix and Cephalexin, discontinued 8/16.

Lab Results: ALT 175, ALP 613, AMYL 3340, LIPASE 1474, USG 1.022.

Radiographs: Not provided by the veterinarian.

Date of Previous IntraPet Ultrasound: No previous IntraPet scans.

Sedation: DECLINED. SEDATION REQUIRED IF FURTHER IMAGING NEEDED.

**SPECIES**

Canine

Stat Report: STAT report not requested by the veterinarian.

**BREED**

Yorkshire Terrier

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

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

**SEX**

Neutered Male

The prostate is normal in size (0.85 cm) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

**AGE**

3/1/07

The left kidney has a normal shape and size (4.49 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. Rare non-obstructive nephroliths and occasional small cortical cysts noted. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

**WEIGHT**

15 Pounds

The right kidney has a normal shape and size (5.06 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. Rare cortical cysts present. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**INTERPRETED BY**

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MS, Diplomate ACVIM  
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**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.55 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

**HOSPITAL NAME**

Timonium AH

The right adrenal gland is normal/prominent in size measuring 0.70 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

**REFERRING VET**

Dr. Stephens

**Spleen**

The spleen is subjectively normal in size and the echotexture is homogenous. The splenic capsule is smooth with no visible irregularities. Rare discrete focal hyperechoic, perivascular parenchymal abnormalities are present. The appearance of these lesions is most consistent with benign splenic myelolipomas. The blood flow through the hilus and splenic parenchyma appears normal.

**INVOICE**

25023

**Liver**

The liver is large in size, with normal echogenicity and smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gallbladder lumen is significantly distended. Some areas of the wall appear mildly thickened with adherent debris. There is a large amount of debris with early organization evident, most consistent with an early mucocele. There is no evidence of bile duct dilation. There is surrounding fluid or inflammation.

### ***Gastrointestinal***

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.36cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Duodenum wall measures 0.4 cm. Jejunum wall measures 0.28 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

### ***Pancreas***

The pancreas is prominent and mottled compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

### ***Free Abdomen***

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

## **PRIMARY FINDINGS**

- Large, heterogeneous liver – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.
- Gallbladder mucocele (early phase)
- Prominent adrenal glands – The bilateral adrenomegaly could be consistent with bilateral hyperplasia (e.g., secondary to pituitary-dependent hyperadrenocorticism), bilateral infiltrative neoplasia, inflammatory adrenal disease, other. Correlation with clinical findings is recommended.

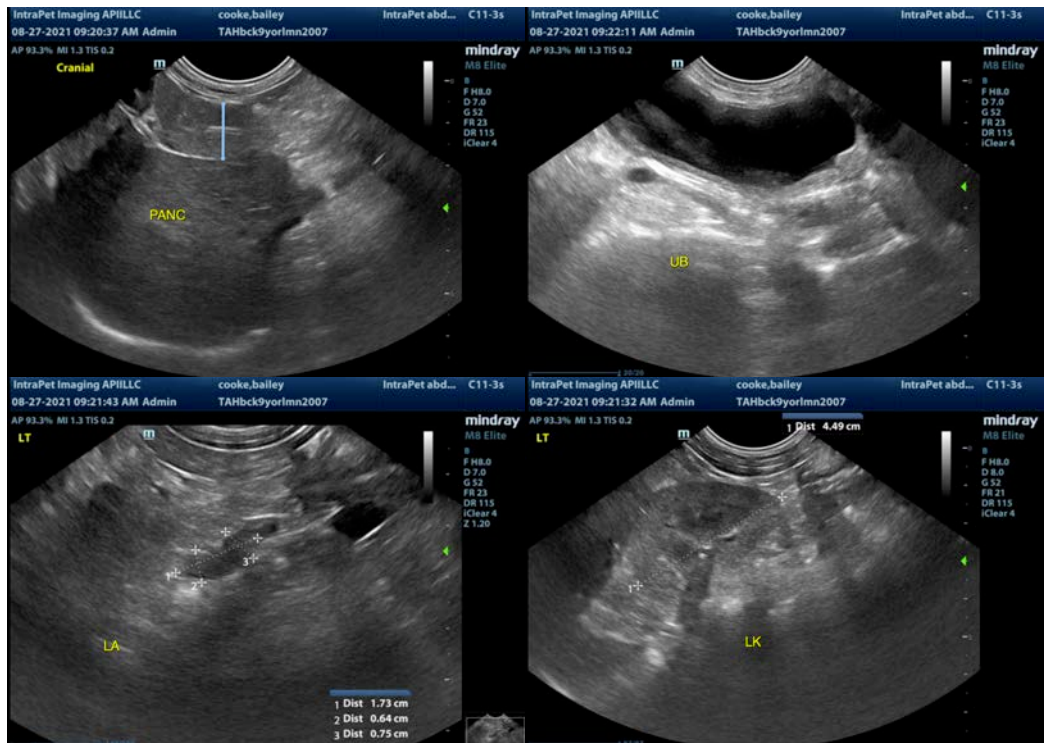
## **SECONDARY FINDINGS**

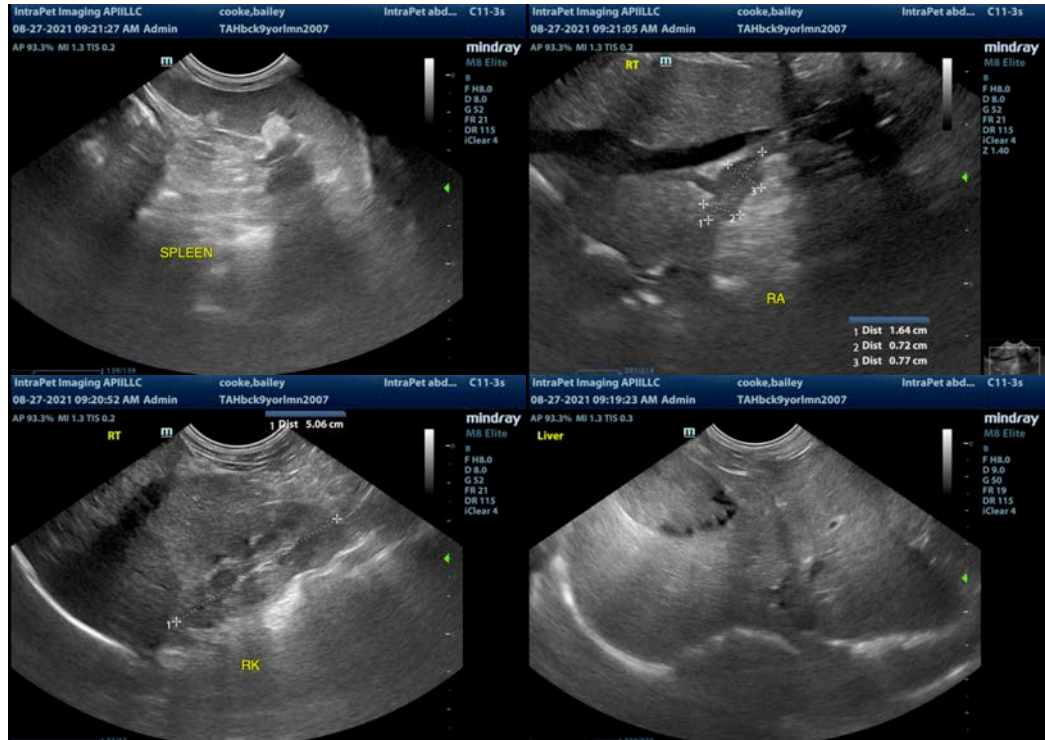
- Decreased corticomedullary distinction in both kidneys with rare, non-obstructive nephroliths and cortical cysts – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.
- Prominent, mottled pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is large and heterogeneous. This could be due to a steroid hepatopathy and reaction to Cushing's disease, or it could be a primary hepatopathy. Additionally, the adrenal glands are prominent but not significantly enlarged, so I suspect this present with a borderline case of Cushing's. Recommend evaluation for other causes of PU/PD, recommend urinalysis and culture, thoracic radiographs, a cardiac ultrasound if there is a murmur, blood pressure evaluation, and a quantitative PLI. You could also consider a liver function test +/- fine needle aspirate of the liver. If these tests fail to identify a concurrent problem and clinically you feel Cushing's is likely, then recommend adrenal function testing (ACTH stim test?) to look for further evidence of Cushing's and to try to decide if treatment is indicated.

Additionally, there is an early gallbladder mucocele present. This would typically present with liver enzyme elevations, abdominal pain, GI Signs, etc., so I would suspect the symptoms reported are not related to the mucocele. Nonetheless, I would recommend starting Ursodiol and very close monitoring, as this could develop into a surgical case.





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.

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