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**DATE PRESENTING CLINICAL SIGNS**

4/7/23 Increasing liver values.

**PATIENT**

Abbe Beard-Lowery

Current Medications: Denamarin; Levetiracetam 250mg.  
Lab Results: ALT 759, ALKP 493, GGT 14 on 3/18/23.  
Date of Previous IntraPet Ultrasound: No previous.  
Sedation: IV: Torb/Midaz.  
Stat Report: Not requested.  
Imaging Performed By: Rachel Brillhart, RDMS.

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**BREED**

Dachshund

**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**

Spayed Female

The left kidney has a normal shape and size (4.18 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**AGE**

5/12/10

**WEIGHT**

10 Pounds

The right kidney has a normal shape and size (4.65 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**INTERPRETED BY**

Kathleen Sennello DVM,  
MS, Diplomate ACVIM  
(Small Animal Internal  
Medicine)

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.54 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**

Banfield Abingdon

The right adrenal gland is normal in size measuring 0.55 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. Simpson

**Spleen**

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

**INVOICE**

46487

**Liver**

The liver is subjectively normal in size, and echogenicity with 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. A hypoechoic nodule is visualized on the periphery of the liver measuring 1.32 cm.

The gallbladder lumen is moderately distended with largely anechoic material. There is a large amount of mixed echogenic partially mineralized debris that appears adhered to the gallbladder wall and extends into a prominent/tortuous bile duct. It is difficult to definitively differentiate this material from possible irregular tissue. The gallbladder wall appears to be approximately 0.21 cm in thickness, and the bile duct is measured at 0.35 cm.

### ***Gastrointestinal***

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm 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. Jejunum wall measures 0.21 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.

## **ULTRASONOGRAPHIC FINDINGS**

- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.
- Prominent mottled pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Heterogeneous liver with hypoechoic nodule – 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. The appearance of the hypoechoic nodule is relatively benign, although continued monitoring is warranted.
- Large amount of gallbladder debris adhered to the gallbladder wall and the bile duct, likely irregular/thickened tissue in the region. Findings could be consistent with cholecystitis. Continued monitoring is warranted for possible underlying neoplastic disease.

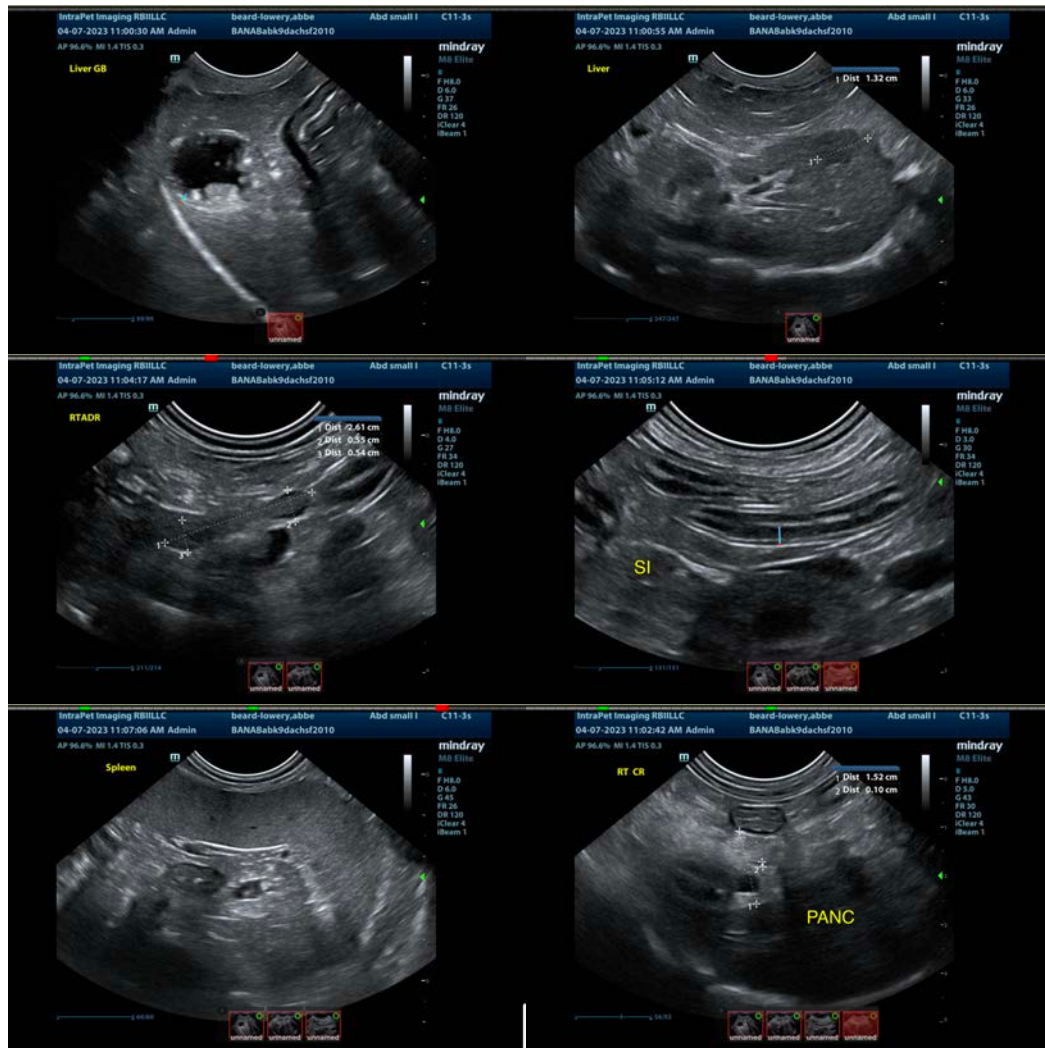
## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

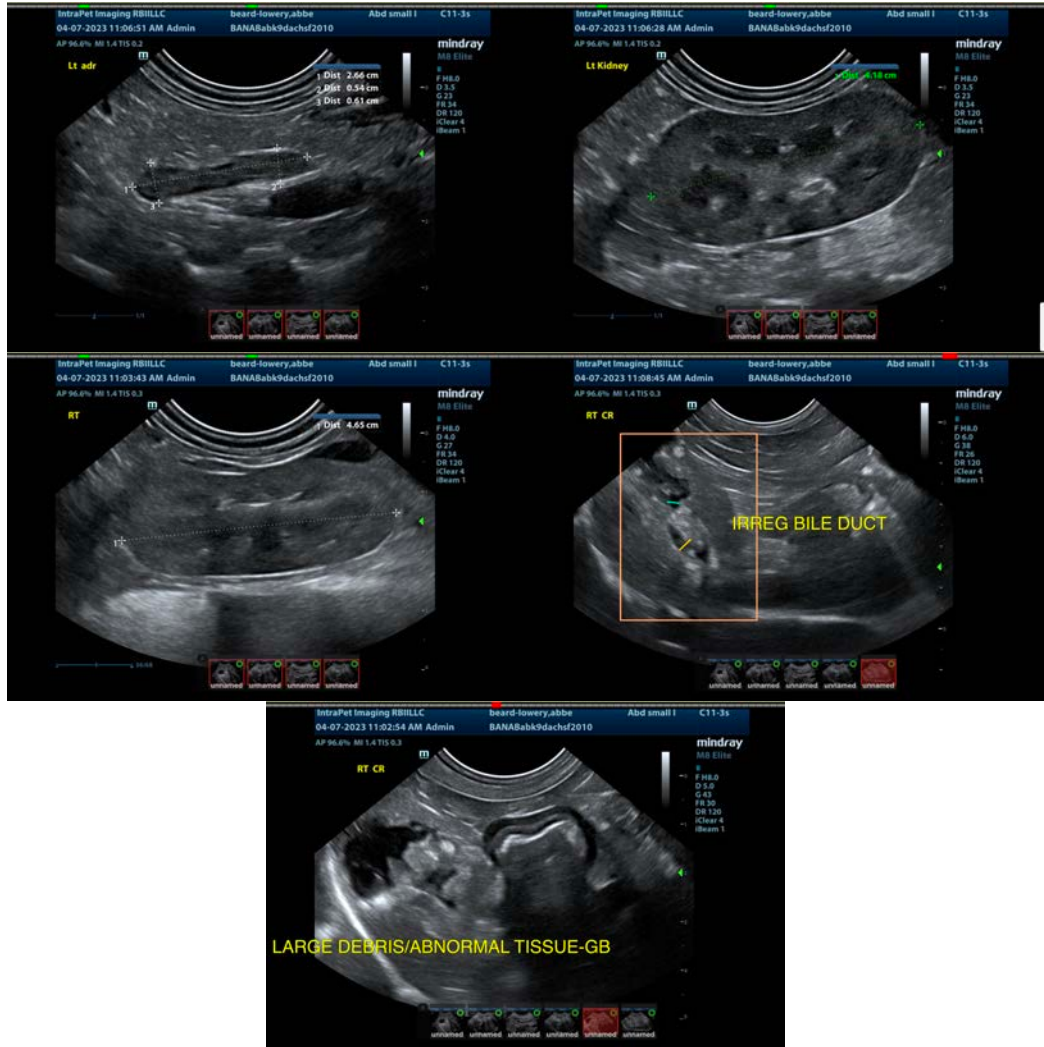
The liver is large and somewhat heterogeneous. This is a non-specific finding. There is a hypoechoic nodule towards the periphery of the liver, which ideally should be aspirated if possible. Additionally, the gallbladder appears abnormal in that there is a large amount of mixed echogenic partially mineralized irregular debris adhered to the gallbladder wall. This material is visualized extending down into the bile duct, where there appears to be associated inflammation. It is difficult to differentiate this abnormal debris with irregular tissue. Recommend treatment for cholecystitis (Ursodiol, antibiotics, Denamarin, etc.), and continued monitoring of the gallbladder and bile duct with ultrasound, looking for possible progression of this lesion. The pancreas is somewhat prominent and mottled, but I suspect this is most consistent with previous

episodes of pancreatic inflammation.

The changes visualized associated with the kidneys are most consistent with age related change. Recommend a urinalysis, culture, and blood pressure as a baseline.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.





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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