

**DATE PRESENTING CLINICAL SIGNS**

8/7/23

**PATIENT**

Ruthless Thompson

History: Ruthless is a 14 year old indoor only DSH cat who presented 7/18/23 for a routine physical exam. Other 15 year old cat in household is on early renal diet and owner is unable to feed separately so she also eats this for the last 2 years. 1.5 pounds weight loss was noted since last exam 12/22. New grade 3/6 left systolic murmur also auscultable.

**SPECIES**

Feline

Current Medications: None.

Lab Results: cbc/chem- BUN mildly decreased at 14mg/dl, creatinine 1.3mg/dl. every else wnl T4- 1.9ugl/dl. Urinalysis- USG 1.021, otherwise unremarkable

Date of Previous IntraPet Ultrasound: No previous.

**BREED**

DSH

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

Imaging Performed By: Stephanie Warga RDCS, RVT.

**SEX**

Spayed Female

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****AGE**

5/25/09

**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.

**WEIGHT**

10.6 Pounds

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 mineral or infarcts observed. Left kidney measures 3.49 cm. Right kidney measures 3.69 cm. Trace pyelectasia is noted bilaterally.

**INTERPRETED BY**Beth Johnson, DVM  
DACVIM**Adrenal Glands**

Left adrenal gland is normal in size (0.3 cm), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

**HOSPITAL NAME**

Banfield Columbia

Right adrenal gland is normal in size (0.37 cm), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

**REFERRING VET**

Dr. Hirsch

**Spleen**

Spleen is subjectively large in size with a mildly swollen but smooth capsule. Parenchyma is normal and homogenous in echogenicity and echotexture. No focal nodules or masses are observed. Splenic vasculature appears normal.

**INVOICE**

23840

**Liver**

Liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. Multifocal (at least 3+) nodules/masses, of mixed echogenicity, primarily hyperechoic in echogenicity, but containing multiple cysts of varying sizes, are noted throughout the liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as 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***

The visible small intestine demonstrates areas of mildly thick muscularis layer relative to mucosa (disruption of the normal 1:3 muscularis:mucosa ratio). Small intestinal submucosa is slightly irregular, thick and hyperechoic, without evident loss of layering appreciated. The lumen of the small intestine is empty with no evidence of obstruction or foreign material.

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. Within the portal vein, at the level of the duodenal papilla, there is an intraluminal subtly echogenic structure, measuring 0.3 cm x 0.7 cm in size.

## **ULTRASONOGRAPHIC FINDINGS**

### **Primary Findings**

- The portal vein density is concerning for a portal vein thrombus, which is not common in cats but when present, is often associated with underlying liver disease, both benign and/or neoplastic.
- Mild gallbladder debris – Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness, however, it can also be associated with hepatobiliary disease in cats 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.
- Feline biliary cystadenoma – In a senior cat, this liver lesion is most consistent with multiple benign biliary cystadenomas. Malignancy cannot be ruled out but is considered less likely give lack of clinical signs and/or laboratory changes.
- Hypersplenism – can be associated with congestion caused by sedation (if sedated) but can also be associated with diffuse infiltrative disease. Both benign conditions such as extramedullary hematopoiesis, lymphoid hyperplasia, amyloidosis, as well as infiltrative neoplastic diseases such as round cell neoplasia should be considered.
- Mild inflammatory bowel disease (IBD) pattern – Thick muscularis has been reported with infiltrative bowel disease including both benign inflammatory disease as well as infiltrative neoplasia such as lymphoma. No aggressive lymphadenopathy, loss of layering, etc. is noted to make lymphoma more probable, but lymphoma cannot be definitively ruled out without tissue sampling.

### **Secondary Findings**

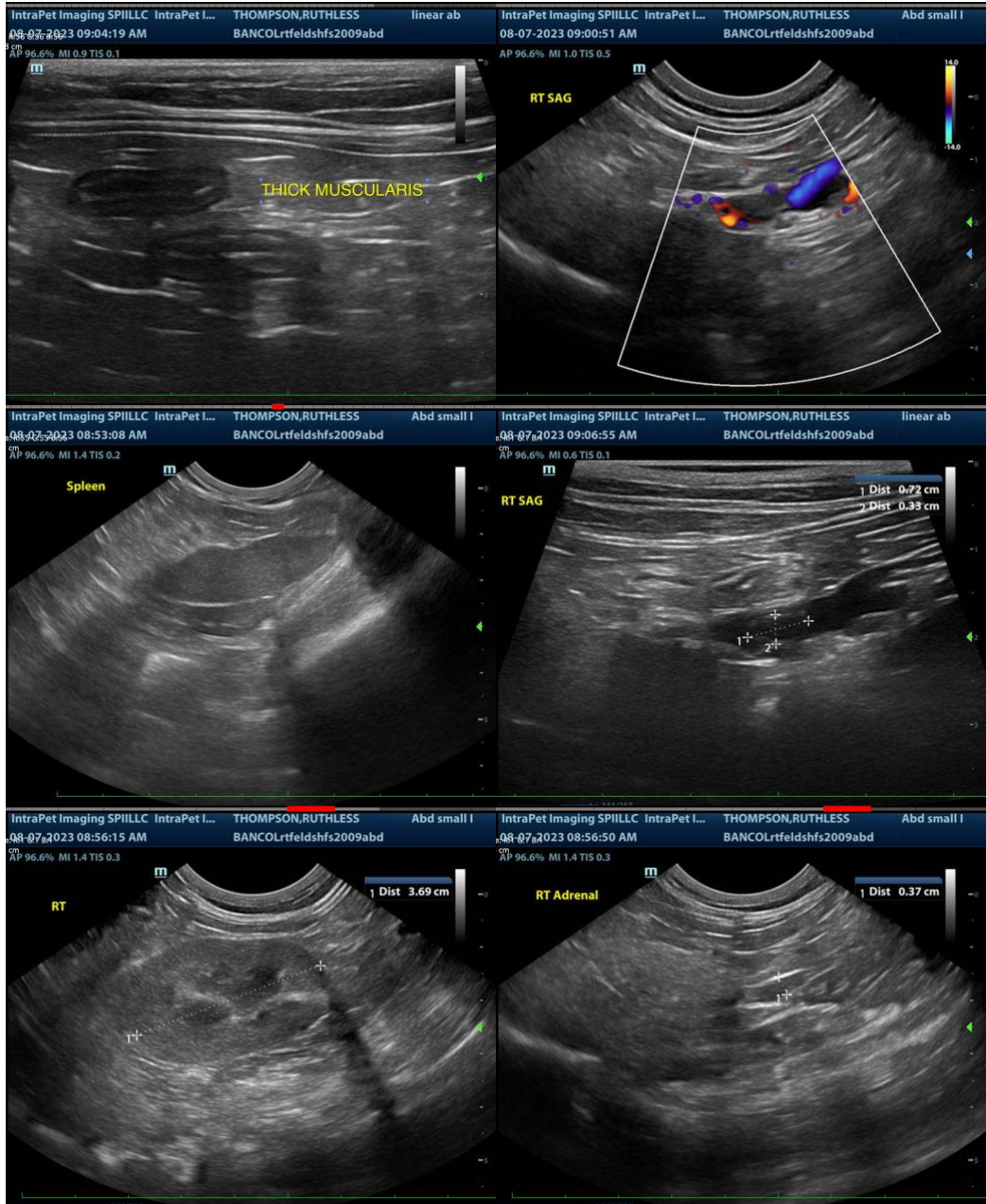
- Age-related pancreatic remodeling- Mild irregularities are consistent with benign age-related change. Low-grade smoldering chronic pancreatitis cannot be ruled out and should be suspected in the face of appropriate clinical signs.
- Age-related kidney changes

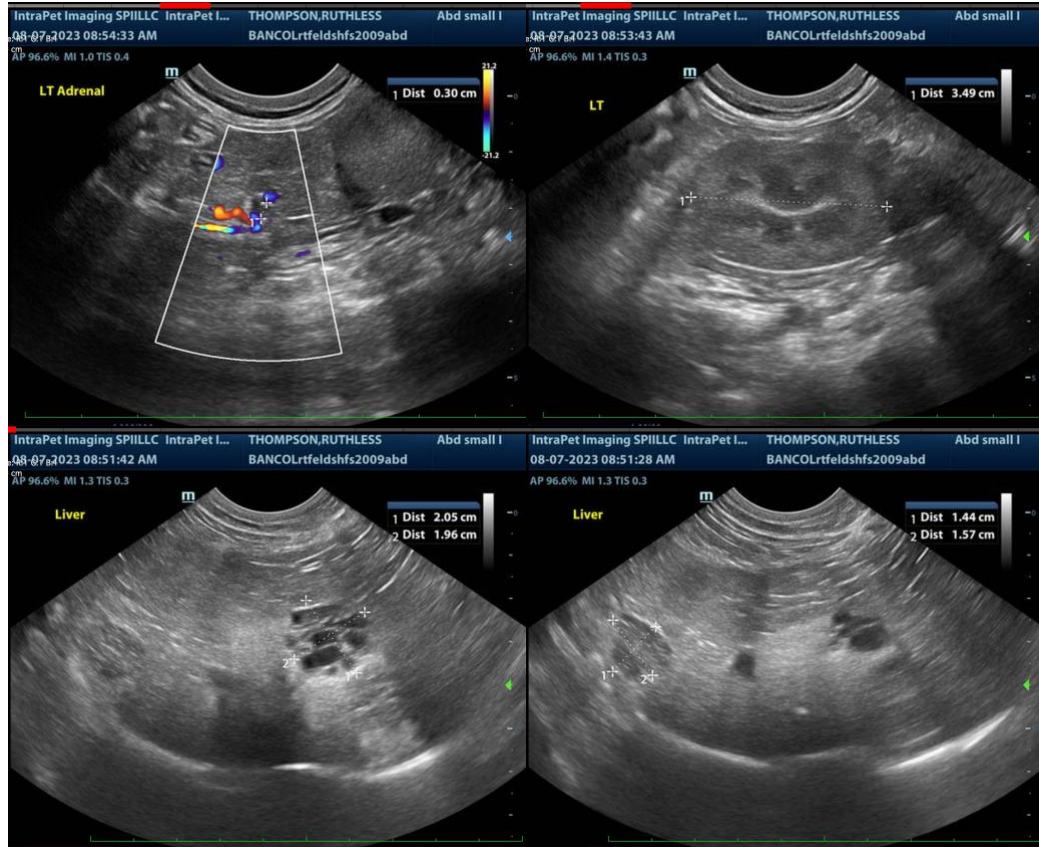
### **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Given the suspect portal vein thrombus, further evaluation for underlying infiltrative liver disease is recommended, and could be considered in the form of fine needle aspirates of the liver, as well as the spleen, if patients coagulation status is appropriate.

Beyond that, given this patients reported weight loss:

- A gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.
- Ideally, biopsies of the GI tract, being sure to include ileum, if possible, are recommended to definitively diagnose and therefore manage the infiltrative bowel disease.
- If biopsies cannot be obtained, empirical therapies could include a probiotic (if diarrhea is present, such as Visbiome or Proviabie), empirical deworming with a 5-day course of Panacur and, if tolerated, a transition in diet, based on trial-and-error response, beginning with a hydrolyzed protein diet. Some patients respond to one brand/version of a hydrolyzed protein diet better than another brand, so several trials may be required.
- Additional considerations could include cobalamin supplementation (unless cobalamin level is evaluated and supplementation is not warranted) and prednisolone (if not contraindicated based on patient contraindications, co-morbidities, etc.).





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**  
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