

**DATE PRESENTING CLINICAL SIGNS**

7/19/23

Pet presented for chronic weight loss. Originally noted in November, pet had lost weight going from 7.63lbs to 7lbs. Bloodwork at that time was relatively normal. Pet has been acting normally at home with no other abnormalities for owner to report. Pet presented for routine senior exam 7/11/23 and more weight loss was appreciated (pet down to 6.44lbs). On PE pet was BAR and found to be underweight, with an ideal BW of 8-9lbs. Iris melanosis OS noted--historic finding; soft, non painful abdomen with no obvious abnormalities noted. Pet had moderate muscle atrophy over entire topline as well. Repeat bloodwork revealed abnormal liver values and so an abdominal US was recommended. Pet is otherwise doing well at home per the owner.

**PATIENT**

Cattypillar Comings

**SPECIES**

Feline

**BREED**

DLH

**SEX**

Spayed Female

**AGE**

7/4/08

**WEIGHT**

6.44 Pounds

**INTERPRETED BY**

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

**HOSPITAL NAME**

Westminster VH

**REFERRING VET**

Dr. Hall

**INVOICE**

44142

Current Medications: None.

Lab Results: 7/12/23: CBC: Monocytes: 0.714K/uL (0.04-0.53); CHEMISTRY: Glucose: 69mg/dL (72-175); ALT: 430U/L(27-158); AST: 142U/L (16-67); ALP: 189U/L (12-59); Bili-Total: 0.4mg/dL (0-0.3); Bili-unconjugated: 0.3mg/dL (0-0.2); Cholesterol 332mg/dL (91-305); UA: SG: 1.025; Protein: trace; WBC: 6-10/HPF; RBC: 2-5/HPF; TT4: 2.4ug/dL (0.8-4.7). 11/15/22: CBC: Monocytes: 0.842K/uL (0.04-0.53); Basophils: 0.165K/uL (0-0.1); CHEMISTRY: ALP: 61U/L (12-59); UA: SG: 1.032; prot: 1+; Epi Cell: 1+; TT4: 2.1ug/dL (0.8-4.7);

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

Imaging Performed By: Rachel Brillhart, RDMS.

**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.

The left kidney has a normal shape and size (3.33 cm). Overall echogenicity is normal with adequate 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.

The right kidney has a normal shape and size (3.36 cm). Overall echogenicity is normal with adequate 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.

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.41 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.

The right adrenal gland is normal in size measuring 0.40 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.

### ***Spleen***

The spleen is subjectively normal in size (0.72 cm), 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.

### ***Liver***

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is mildly heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are occasional ill-defined hypoechoic nodules visualized within the parenchyma, examples of which measure 1.12 cm and 1.13 cm in diameter.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and primarily anechoic. The cystic and common bile ducts are normal/not visible.

### ***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 uniform diameter with minimal fluid distension. Wall thickness is normal to slightly increased. Bowel loops follow a typical curvilinear path with distinct wall layering, but some areas display a prominent muscularis layer which does not display the typical 1:3 muscularis:mucosa layer ratio. Duodenum wall measures 0.32 cm. Jejunum wall measures 0.40 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 large and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is evidence of regional mesenteric inflammation. Consistent with mild pancreatitis.

### ***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**

- Hypoechoic, prominent pancreas with a prominent pancreatic duct and mild surrounding reactive mesentery – The pancreatic changes are most consistent with moderate pancreatitis/pancreatic inflammation. Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving.
- Mildly heterogeneous liver with occasional ill-defined hypoechoic nodules – 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 nodules visualized are relatively subtle and could represent a benign process such as hyperplasia, etc., but a neoplastic process can't be ruled out.

- Diffusely thickened small intestine with a prominent muscularis layer – The small intestinal wall changes could be consistent with an underlying inflammatory process. These types of changes can sometimes be seen in normal older cats. Correlate with clinical signs.

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

The changes observed in the liver are non-specific, but there are some ill-defined hypoechoic nodules visualized. These could represent benign or neoplastic changes. Additionally, there is diffuse thickening/prominence of the muscularis layer in the small bowel, and the pancreas appears prominent and mildly inflamed. The combination of these changes could be consistent with Triaditis. Consider the following:

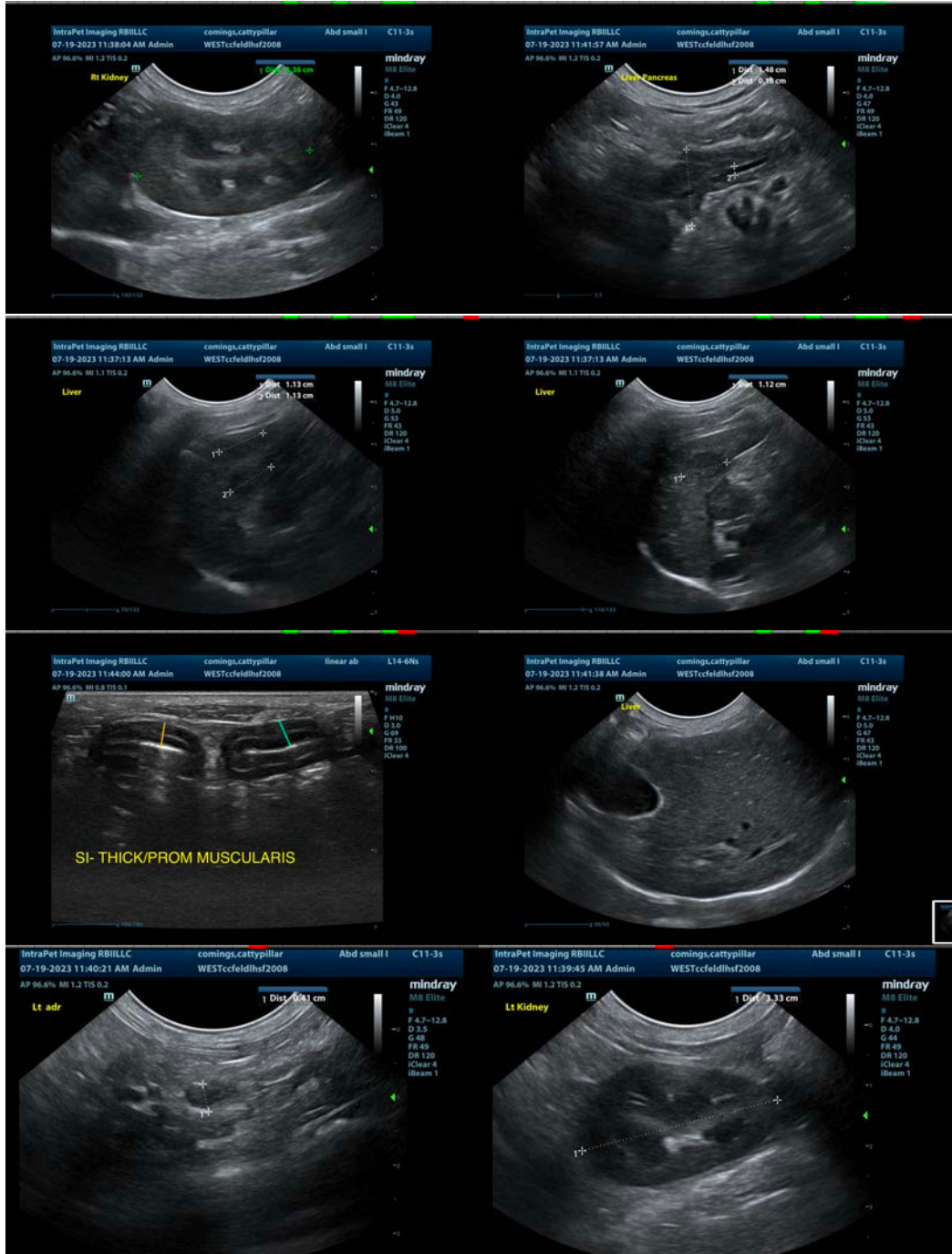
- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc.
- Recommend thyroid evaluation (I believe this has already been done)
- Recommend screening for toxoplasmosis.
- If not already done consider pre and post prandial bile acids to evaluate liver function
- Consider Fine needle aspirate if round cell neoplasia is on your differential list (25 g needle, normal coags)
- Consider liver biopsy with samples obtained for histopathology and culture
- If triaditis is suspected consider therapy for cholangiohepatitis, testing for pancreatitis and evaluation for IBD (GI panel to Texas A&M GI lab)
- Consider a feeding tube if patient is not eating for a prolonged period of time

At the same time, I would treat for pancreatitis and consider these steps to further evaluate the bowel changes described:

- Consider a novel protein/hydrolyzed protein diet (exclusively at least 4-6 weeks)
- Consider a GI panel to Texas A&M for evaluation of B12 levels, folate, PLI/TLI etc.. to further evaluate for pancreatic/small intestinal disease.
- Recommend chronic probiotic therapy.

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

Considering a fine needle aspirate of the liver is especially important because of the hypoechoic nodules described. Continued monitoring of these nodules should be considered. Additionally, if this patient is not improving, consider surgical evaluation to biopsy the GI tract, liver and pancreas, as well as place a feeding tube if the patient is not eating.





**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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