



**DATE PRESENTING CLINICAL SIGNS**

8/15/23 Presented on 7/25/23 with decreased appetite with occasional vomiting and diarrhea. On physical exam intestines palpated slightly rope-like with a BCS of 4-5/9. Bloodwork revealed mild increases in renal values, decreased total protein (results copied below). Patient began taking mirataz transdermal, metronidazole, proviable, purina EN, and cerenia. After a few days of continued decreased appetite, she asked to start taking steroids, understanding that it would affect any kind of testing.

**PATIENT**

Jezebel Uhl

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Spayed Female

**AGE**

7/25/09

**WEIGHT**

7.8 Pounds

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**HOSPITAL NAME**

Perry Hall AH

**REFERRING VET**

Dr. Breidenbaugh

**INVOICE**

44682

Current Medications: Mirtazapine transdermal: 1.5in ribbon of ointment to the inner surface of ear q24h  
Prednisolone 3mg/mL: 0.6 mL PO q12h x 14 days, then 0.6 mL PO q24h x 2 weeks. \*will be at 0.6mL q12hr dose at time of AUS\* Tentatively continued at time of AUS pending symptoms: Cerenia 16mg: 1/4 tablet PO q24hr, Metronidazole 100mg/mL: 0.5mL PO q12hr, Proviaible pack <20lbs: 1 capsule PO SID, 1mL paste 2-3x daily.  
Lab Results: 7/25/23: CBC: low retic hgb (14.7), lymphopenia (0.78), monocytosis (0.788). CHEM: elevated SDMA (15) with normal creat (1.5) \*IRIS 1, no azotemia\*, decreased total protein (6.2), fPL: normal (1.6) UA: usg 1.036, pH 6.5, 1+ protein, trace ketones, negative sediment. T4: 1.1 WNL.  
Date of Previous IntraPet Ultrasound: No previous.  
Sedation: Not required to complete full diagnostic ultrasound.  
Stat Report: Not requested.  
Imaging Performed By: Andi Parkinson, BS, RDMS.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder is moderately 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.

The right kidney is normal in size (3.77 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, or mineral observed. A chronic infarct is noted in the cranial pole.

The left kidney is normal in size (3.69 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.

**Adrenal Glands**

Adrenal glands are bilaterally uniformly plump egg-shaped adrenals (left measures 0.51 cm, right measures 0.64 cm), hypoechoic in echogenicity with bilateral dystrophic mineralization noted. This is most likely a benign age-related change. This change can be caused by chronic stress/disease, so investigation for/management of other disease (chronic kidney disease, hyperthyroidism, etc.) is recommended.

**Spleen**

The 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.

**Liver**

The 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. A 0.50 cm x 0.80 cm hypo- to anechoic nodule is noted in the caudal liver. 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 stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestine demonstrates areas of thick muscularis layer relative to mucosa (disruption of the normal 1:3 muscularis:mucosa ratio). Small intestinal submucosa is slightly irregular, thick and hyperechoic. There are two areas of small bowel, both approximately 2.0 cm long with thick wall and loss of layering. One of the loops measures 0.25 cm thick and one measures 0.42 cm thick. The lumen is empty with no evidence of obstruction or foreign material. The lesions appear to be two separate lesions. However, they are not both visible at the same time, so one bowel mass measured twice can't be 100% ruled out.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

### ***Pancreas***

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

### ***Free Abdomen***

There is no evidence of free peritoneal effusion noted in these images.

Mesenteric lymph nodes are enlarged with swollen irregular capsular contour and loss of normal length to width ratio (rounded in shape). Nodes are hypoechoic with loss of normal parenchymal detail.

## **PRIMARY FINDINGS**

- Gastrointestinal lymphoma (suspect) pattern – Thick muscularis has been reported with infiltrative bowel disease including both benign inflammatory disease as well as infiltrative neoplasia such as lymphoma. Given the loss of layering noted in what appears to be two separate loops of small bowel, infiltrative neoplasia is considered more likely.
- Aggressive mesenteric lymph nodes – most consistent with infiltrative round cell or metastatic neoplasia. A benign aggressive inflammatory response cannot be ruled out without tissue sampling +/- culture.
- Liver nodule – Likely represents a benign change such as nodular hyperplasia, extramedullary hematopoiesis versus other. However, infiltrative round cell or even metastatic neoplasia can't be definitively ruled out.

## SECONDARY FINDINGS

- Age related adrenomegaly
- Chronic infarct right kidney
- Mild gallbladder debris - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs 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.

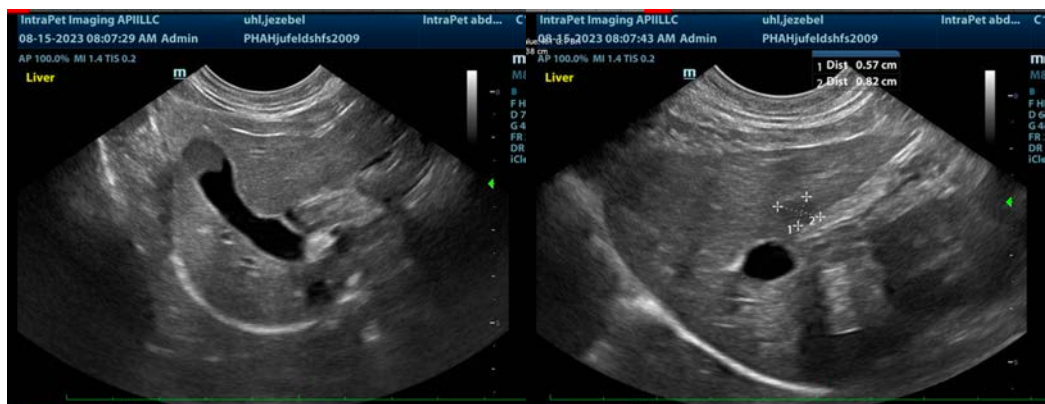
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

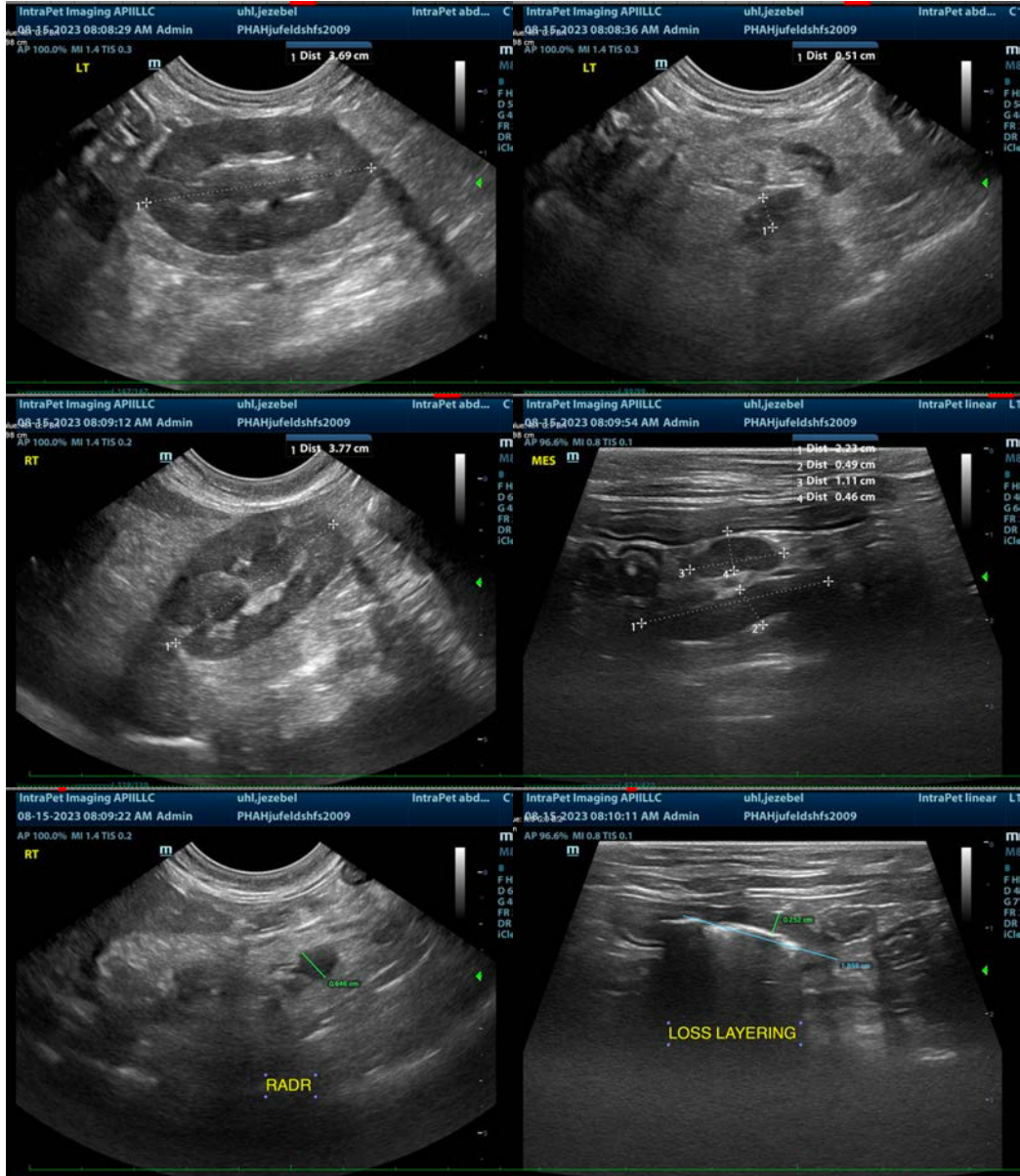
A gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.

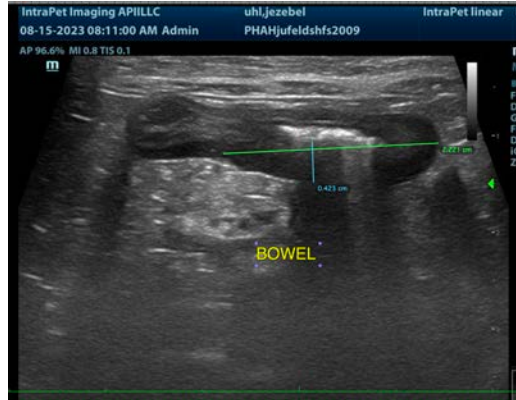
Tissue sampling is recommended to look for further evidence of infiltrative round cell disease such as lymphoma. A fine needle aspirate of enlarged lymph nodes +/- possibly the areas of bowel with loss of layering could be considered if patient's coagulation status is appropriate.

If a cytologic diagnosis is not obtained, 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 proviable), 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/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.

**Beth Johnson, DVM, DACVIM**  
info@sonopath.com