

**DATE PRESENTING CLINICAL SIGNS**

2/18/22

Presenting Complaint: Not Eating, Lethargic, Diarrhea. History: Date: 02-16-2022 Notes: Had amputation of LF thoracic limb done last November for mast cell tumor. Lungs radiographed clear at that time. Started chemotherapy (last month?); getting treatment every other week. Last dose was almost 2 weeks ago. About 6 days ago (1 week after her last treatment) she vomited once then appetite decreased. Owners gave dose of Cerenia for 2 days in a row; seemed to help and she improved for a couple days following that, then appetite decreased again. Did eat some plain chicken last night. Stool became soft about 2 days ago.

**PATIENT**

Honey Maloy

**SPECIES**

Canine

Current Medications: buprenorphine, metronidazole, omeprazole, maropitant, prednisone EOD

Lab Results: anemia, abnormal snap CPLI

Radiographs: irregular spleen on xray.

**BREED**

Chihuahua X

Date of Previous IntraPet Ultrasound: No previous IntraPet scans.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

**SEX**

Spayed Female

**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.

**AGE**

2/16/22

The left kidney has a normal shape and size (5.02 cm) with mild pyelectasia at 0.12 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. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

**WEIGHT**

20.2 Pounds

The right kidney has a normal shape and size (4.99 cm) with mild pyelectasia at 0.12 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. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis. 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 0.71 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.

**IMAGING PERFORMED BY**

Rachel Brilhart RDMS

The right adrenal gland is normal in size measuring 0.72 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.

**HOSPITAL NAME**

Animal Emergency  
Hospital

**Spleen**

The spleen is large in size and irregular. The spleen echotexture is heterogenous and mottled, the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. While no large discrete mass lesions are observed, the severe mottling becomes an almost subtle nodular pattern in some areas with hypoechoic nodules measuring 0.5-1.0 cm with some irregularity to the splenic capsule. There is some free fluid surrounding the spleen.

**REFERRING VET**

Dr. Martinoli

**INVOICE**

35759

**Liver**

The liver is large in size, and normal in 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. No focal nodules or cystic lesions are observed.

The gallbladder lumen is significantly distended. There is a small amount of hyperechoic intraluminal debris. The gallbladder wall appears thickened at 0.31 cm with a doubled wall halo sign, consistent with intramural edema.

### ***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. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) 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 hypoechoic with mildly hyperechoic surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

### ***Free Abdomen***

There is a small amount of intraabdominal free fluid. There is no lymphadenomegaly visualized, and the omentum is mildly increased around the pancreas.

## **PRIMARY FINDINGS**

- Large, irregular, mottled, almost nodular spleen – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. The appearance of the spleen is concerning with the history of mast cell tumor.
- Prominent, hypoechoic pancreas with mildly hyperechoic mesentery surrounding. The pancreatic changes are most consistent with mild 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.
- 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. These findings could be consistent with the current Prednisone therapy or with infiltrative disease (such as mast cell tumor).
- Double walled halo sign of the gallbladder – Findings are most consistent with intramural edema. The gallbladder itself looks relatively normal, so this could be reactive to systemic disease such as pancreatitis, intraabdominal inflammation, ascites, etc.
- Small volume free abdominal fluid – With the history of anemia, it would be helpful to try to get a sample of this fluid to rule out hemorrhage. I'm concerned that this could represent systemic inflammation secondary to the splenic changes.

## SECONDARY FINDINGS

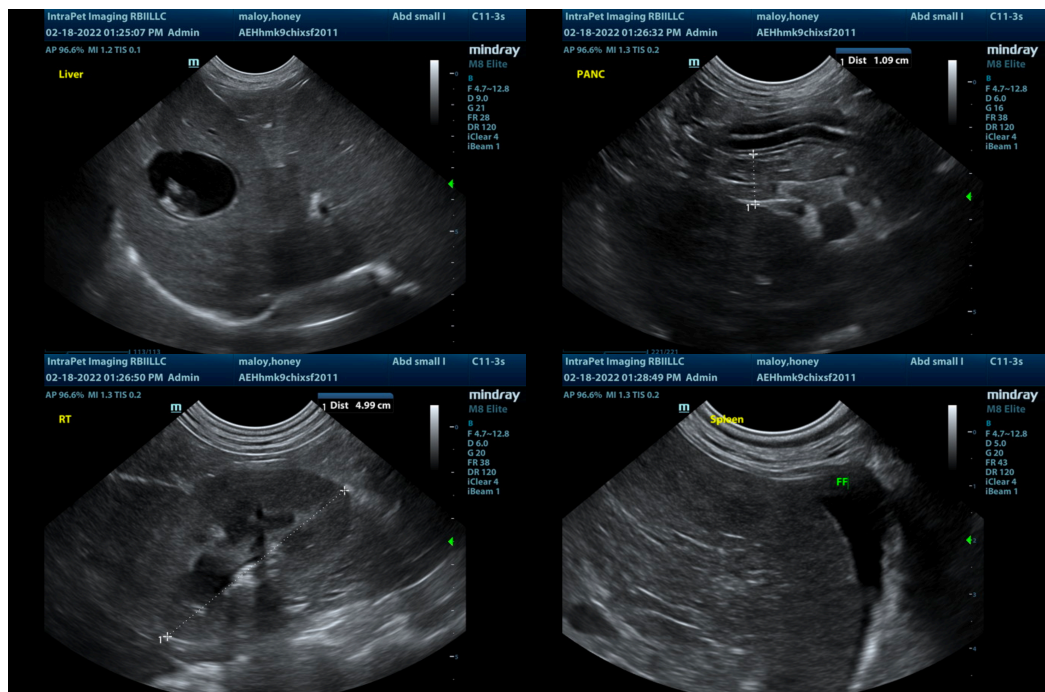
- Decreased corticomedullary distinction in both kidneys with bilateral pyelectasia – The bilateral renal findings are consistent with age-related change. Pyelectasia of the left/right kidney could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.

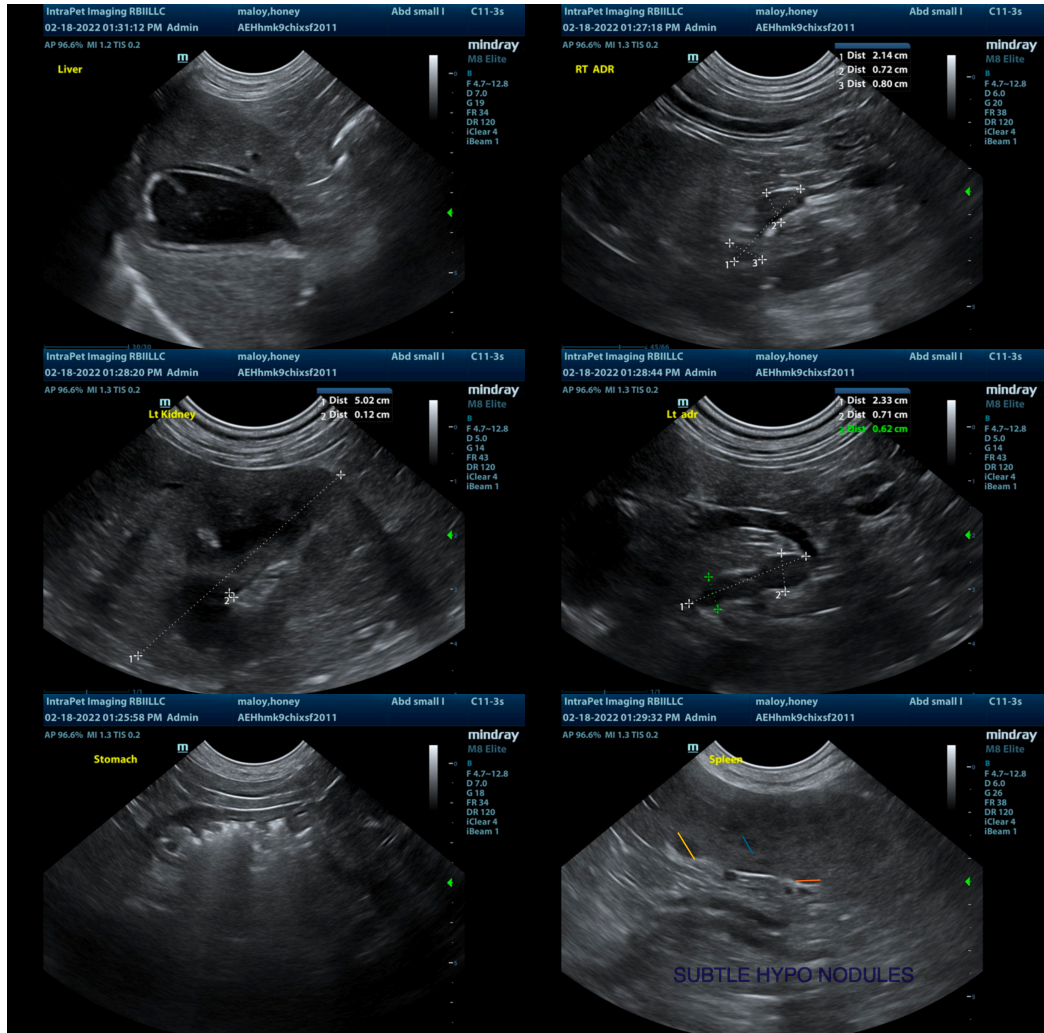
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The spleen is large and irregular, almost nodular, and the liver is large and heterogeneous. These changes could be incidental, but could also be related to the mast cell disease reported in the history. There is some free fluid in the abdomen in addition to intramural edema of the gallbladder. This can be seen with inflammatory type changes. Pancreatitis is also a possibility, as the clinical disease does not always mirror the severity of the ultrasound change.

- Recommend fine needle aspirate of the liver and spleen, and pre-medicate with Benadryl.
- If possible, obtain a sample of the free abdominal fluid for a fluid analysis and cytology.
- Recommend 3-view thoracic radiographs.
- Consider a urinalysis, urine culture, and blood pressure evaluation due to the renal changes observed in this case.
- Recommend continued monitoring of the gallbladder with ultrasound.

At this time, my primary differentials would be recurrence of mast cell disease, side effects from chemotherapy, etc. Consider a pathologist review of the CBC to look for any evidence of atypical cells, regeneration, blood parasites, etc. If non-regenerative, you could consider a bone marrow aspirate.





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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