**DATE**

3/24/2023

**PRESENTING CLINICAL SIGNS**

History: P was seen on 3/14/23 for bloody diarrhea, treated outpatient with SQ fluids, Cerenia, Metro and Provable Kit, has been eating chicken and rice. Diarrhea has improved but P is only defecating once a day. O stopped Metro yesterday. O reports that Ps belly seems hard, and P is having a hard time getting comfortable, laying down. Eating chicken and rice well, wants treats, no vomiting. Had BW and Abd xray at reg vet about 2 weeks ago - BW attached, with NSF (emailed)

**SPECIES**

Canine

Assessment: decreased stool, tense abdomen.  
Concerns for possible Panc.

**BREED**

Yorkshire terrier mix

Lab Results: Attached.  
Date of Previous IntraPet Ultrasound: No previous.  
Sedation: Not required to complete full diagnostic ultrasound.  
Stat Report: Not requested.

**SEX**

Spayed Female

Imaging Performed By: Rachel Brillhart, RDMS.

**AGE**

2011

**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 (4.0 cm) with pinpoint non-obstructive nephroliths. 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, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.72 cm) with pinpoint non-obstructive nephroliths. 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, infarcts or hydroureter. Renal vasculature is normal.

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.48 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 0.63 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 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.

**INTERPRETED BY**

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

**HOSPITAL NAME**

Animal Emergency  
Hospital

**REFERRING VET**

Dr. Hicks

**INVOICE**

10143

### ***Liver***

The liver is mildly enlarged, and echogenicity with smooth peripheral margins. The parenchyma is mildly heterogenous echotexture. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

### ***Gastrointestinal***

The stomach contains large shadowing ingesta. 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 jejunum measured as normal (0.25 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**

- Borderline large/heterogenous 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. If liver enzymes are not evaluated this could be within normal limits.
- Moderate gallbladder debris. The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring.
- Large shadowing ingesta within the gastric lumen. Findings are consistent with a non-fasted patient. Shadowing ingesta limits full evaluation of the stomach and cranial abdomen.

## SECONDARY FINDINGS

- Small non-obstructive nephroliths visualized in both kidneys. Hyperechoic foci are visualized in the kidney most consistent with nephroliths. There is no current evidence of obstructive disease. Correlate findings with abdominal radiographs, urinalysis, and culture. Continued monitoring is warranted for progression/obstruction.
- 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.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

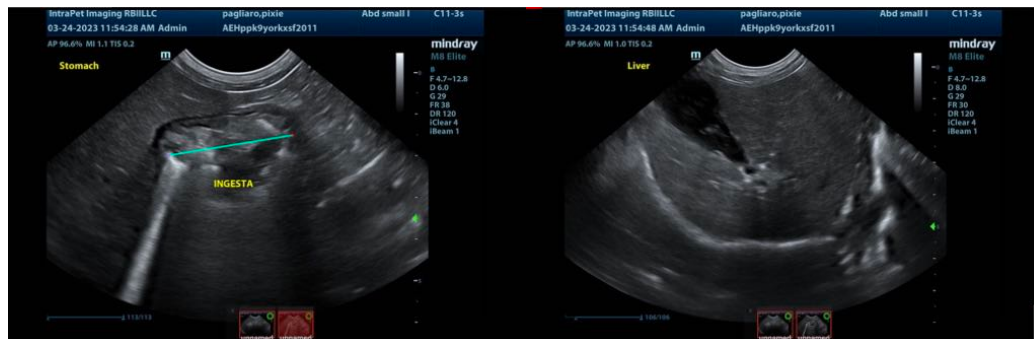
No focal lesions are visualized to definitively determine the cause of the symptoms described. The pancreas is somewhat prominent given the hard abdomen etc. I would correlate these findings with a qualitative PLI level, looking for possible evidence of mild pancreatitis. Unfortunately, there are many causes for hemorrhagic diarrhea which cannot be diagnosed by ultrasound alone. Possible differentials include dietary indiscretion, food allergies/dietary intolerance, non-specific acute enteritis/enterocolitis, pancreatitis, dysbiosis, IBD, and intestinal neoplasia.

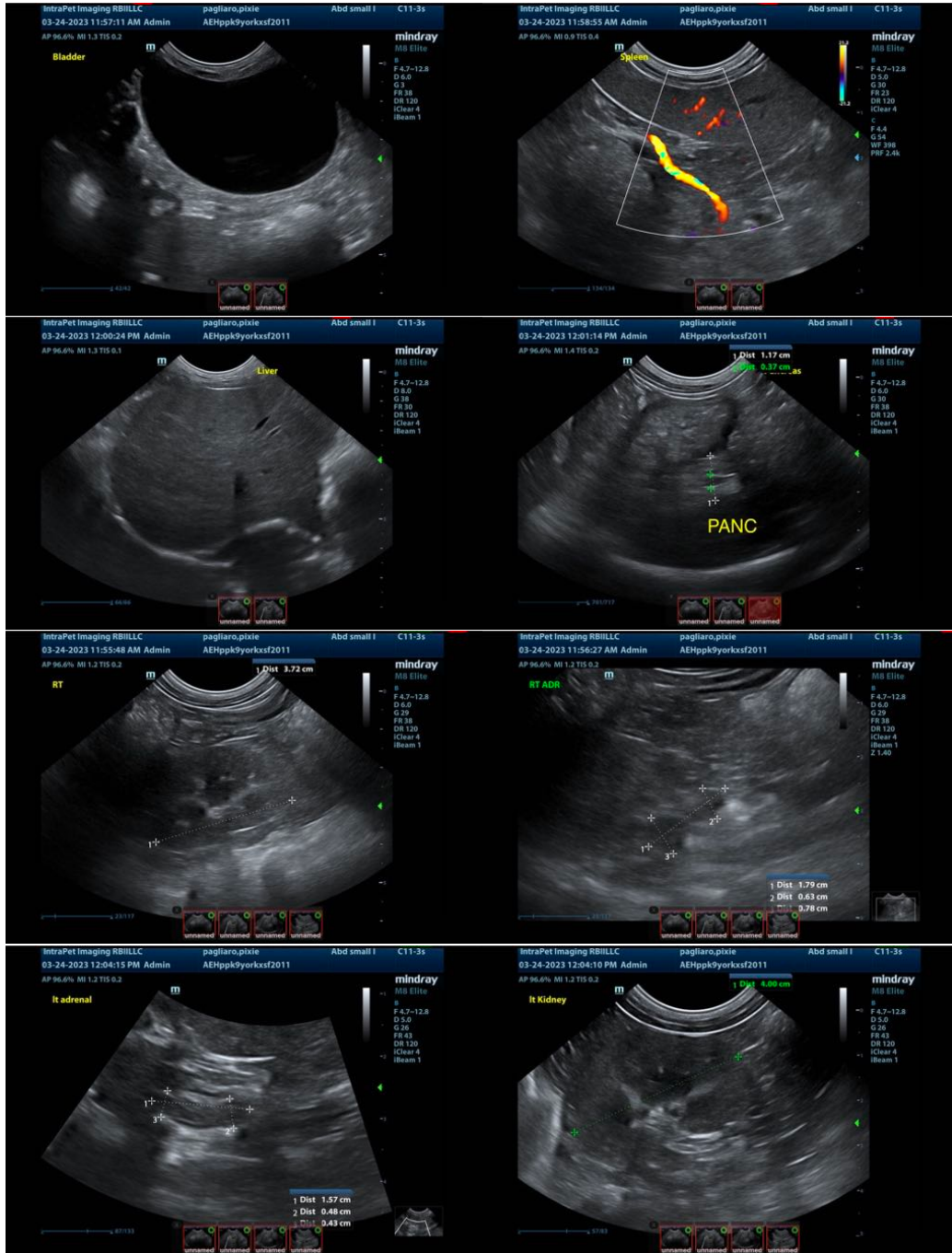
Additional diagnostics and therapies could include:

- 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 pre and probiotic therapy.
- If symptoms persist despite taking these measure and non-specific treatment for enterocolitis, then consider obtaining GI biopsies. (Large and small bowel)

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

If symptoms persist consider recheck ultrasound with an empty stomach to further evaluate the gastric wall/cranial abdomen.







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.

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small animal Internal Medicine)  
kathleen.sennello@sonopath.com