

**DATE PRESENTING CLINICAL SIGNS**

12/20/22

Diarrhea twice in the last year- responds to medical therapy (Metronidazole and Probiotics) 11/2021 and 11/2022. Vomiting 1 episode 11/2021, resolved with symptomatic therapy. None since. Normal PE, labs 11/2022.

**PATIENT**

Ellie Bernstein

Current Medications: None current.

Lab Results: See attached.

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Torbugesic IV.

Stat Report: Not requested.

**SPECIES**

Canine

**BREED**

Mix

**SEX**

Spayed Female

**AGE**

3/1/12

**WEIGHT**

42.6 Pounds

**INTERPRETED BY**Beth Johnson, DVM  
DACVIM**IMAGING PERFORMED BY**Stephanie Warga  
RDCS, RVT**HOSPITAL NAME**

Timonium AH

**REFERRING VET**

Dr. Montessi

**INVOICE**

43590

**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 (5.75 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. A hyperechoic band parallel to the corticomedullary border is present.

The left kidney is normal in size (6.47 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. A hyperechoic band parallel to the corticomedullary border is present.

**Adrenal Glands**

The right adrenal gland is normal in size (2.36 cm long x 0.70 cm at the cranial pole and 0.55 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (2.9 cm long x 0.79 cm at the cranial pole and 1.3 cm at the caudal pole), shape and contour. A hyperechoic nodule is noted in the caudal pole. Nodule does not disrupt normal shape and/or architecture. Visible surrounding vasculature appears normal.

**Spleen**

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is normal in echogenicity, but contains a coarse heterogeneous echotexture, most appreciated at the head/cranial aspect of the spleen. No focal nodules or masses are observed. Splenic vasculature appears normal. Surrounding mesenteric fat is slightly enhanced/hyperechoic around the head/cranial aspect of the spleen.

**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. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as mild 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 intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

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.

There is no apparent lymphadenopathy noted in these images.

## **PRIMARY FINDINGS**

- **Medullary rim sign bilaterally** - This finding is of unknown clinical significance and can be a normal variant, often idiopathic. Medullary rim sign can be present with renal disease including lymphoma, hypercalcemic nephropathy, Leptospirosis, tubular disease, other and should be interpreted in combination with other more specific indications of kidney disease such as isosthenuria, proteinuria, azotemia, etc. This is a common incidental finding in patients with diabetes mellitus.
- **Coarse spleen** - 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, as well as infiltrative neoplastic diseases such as round cell neoplasia should be considered.

## **SECONDARY FINDINGS**

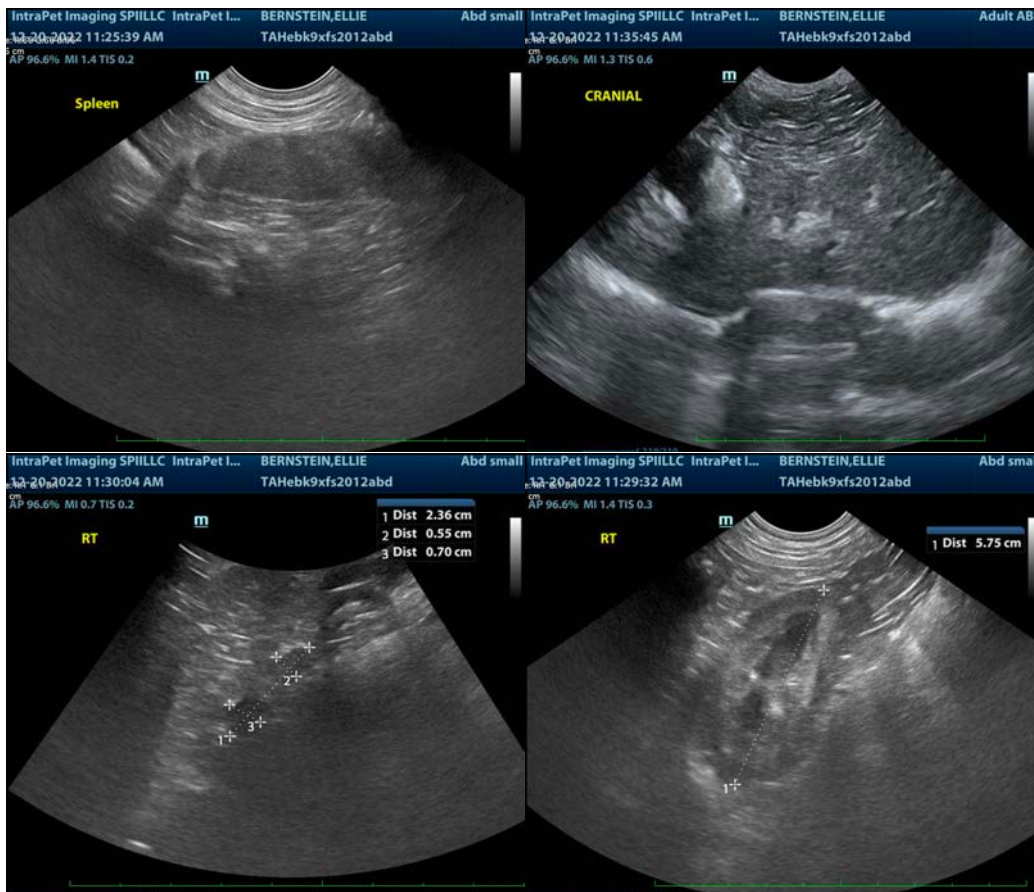
- **Mild gallbladder debris** - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.
- **Hyperechoic adrenal nodule caudal pole left adrenal gland** - Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, myelolipoma, adrenal hyperplasia secondary to pituitary disease or metastatic disease. Ultrasound alone cannot differentiate between functional and non-functional nodules and/or between benign and malignant disease. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest adrenal disease) are most often incidental and should be monitored.

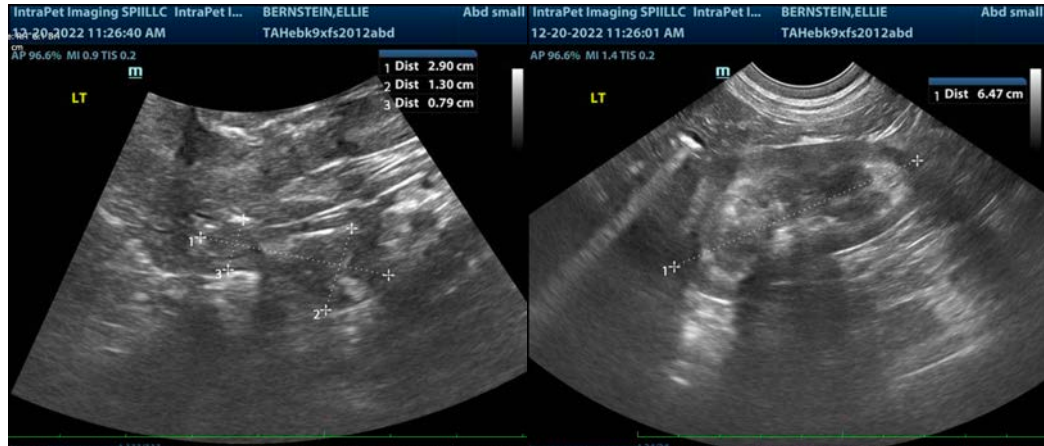
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The findings described above are overall non-specific and likely not directly related to this patient's intermittent diarrhea. Having said that, given the signs of mild inflammation surrounding the spleen, a fine needle aspirate of the cranial aspect of the spleen could be considered if patient's coagulation status is appropriate. Or, if a less invasive approach is elected, monitoring of the spleen for changes with a recheck ultrasound in 8-12 weeks could be planned.

Given the diarrhea, 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. Additionally, a fecal exam is recommended if not recently evaluated, as is a fecal enteropathogen PCR panel to Texas A&M GI Laboratory.

In the meantime, if tolerated, an empirical transition to a hydrolyzed protein diet could be considered on a trial and error basis. Empirical deworming with a 5-day course of Panacur is recommended and a probiotic such as Visbiome or Provable could be continued long-term to see if that helps prevent flare ups.





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**  
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