**DATE PRESENTING CLINICAL SIGNS**

8/26/22

History: Hypoproteinemia, no diarrhea or weight loss, no proteinuria. Occasional, periodic urine leaking during daytime sleeping, not during nighttime sleeping.

**PATIENT**

Gracie McNeal

Current Medications: None.

Lab Results: Albumin -1.6 g/dl, Globulin - 1.5 g/dl. UA - quiet, no protein; USG 1.013, pH 6.5.

Date of Previous IntraPet Ultrasound: No previous.

**SPECIES**

Canine

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

Imaging Performed By: Rachel Brillhart, RDMS.

**BREED**

German Shorthair

Pointer

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****SEX**

Spayed Female

**Urinary System**

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2.0 cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

**AGE**

7/17/13

The left kidney has a normal shape and size (6.96 cm). Overall echogenicity is normal with adequate 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 hydroureter. Renal vasculature is normal.

**WEIGHT**

44.5 Pounds

The right kidney has a normal shape and size (6.54 cm). Overall echogenicity is normal with adequate 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 hydroureter. 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 0.65 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.

**HOSPITAL NAME**

Swan Creek VC

The right adrenal gland is normal in size measuring 0.6 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.

**REFERRING VET**

Dr. Holloway

**Spleen**

The spleen is large in size, echotexture is severely heterogeneous. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

**INVOICE**

17053

**Liver**

The liver is subjectively large 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. 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 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 uniform diameter with minimal fluid distension. Wall appears subjectively, moderately increased. Bowel loops follow a typical curvilinear path with distinct wall layering. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed. The duodenum wall measured 0.5 cm. The jejunum wall measured 0.49 cm. Mucosal fogging and speckling is evident.

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 normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

### ***Free Abdomen***

There are diffuse prominent mesenteric lymph nodes visualized, particularly at the level of the root of the mesentery, measuring 0.74 cm, 0.64 cm and 0.81 cm. The omentum appears uniformly hyperechoic.

## **ULTRASONOGRAPHIC FINDINGS**

- Large severely mottled 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.
- 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.
- Large, mildly 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.
- Moderate gallbladder debris
- Diffusely thickened small intestine with mucosal speckling and mucosal fogging
- Mild mesenteric lymphadenopathy. The prominent abdominal lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.

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

The GI tract is diffusely thickened with mucosal speckling. These findings are most consistent with primary GI disease, which correlates with the low albumin levels reported. This is most consistent with a protein losing enteropathy, but a liver function test should be performed to confirm that there is not concurrent

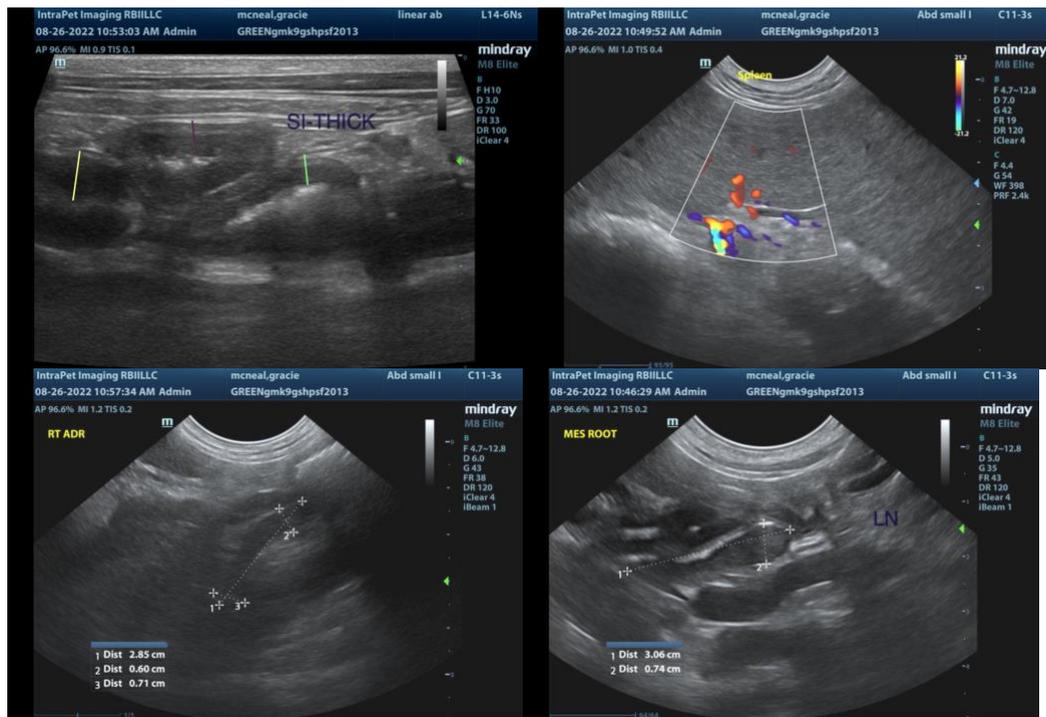
liver disease going on. There are many types of intestinal disease that can cause a low protein, the most common would be IBD, lymphangiectasia or intestinal neoplasia. Differentiation of these disease is based on GI biopsies. There is a significant difference in prognosis and treatment strategies with each disease.

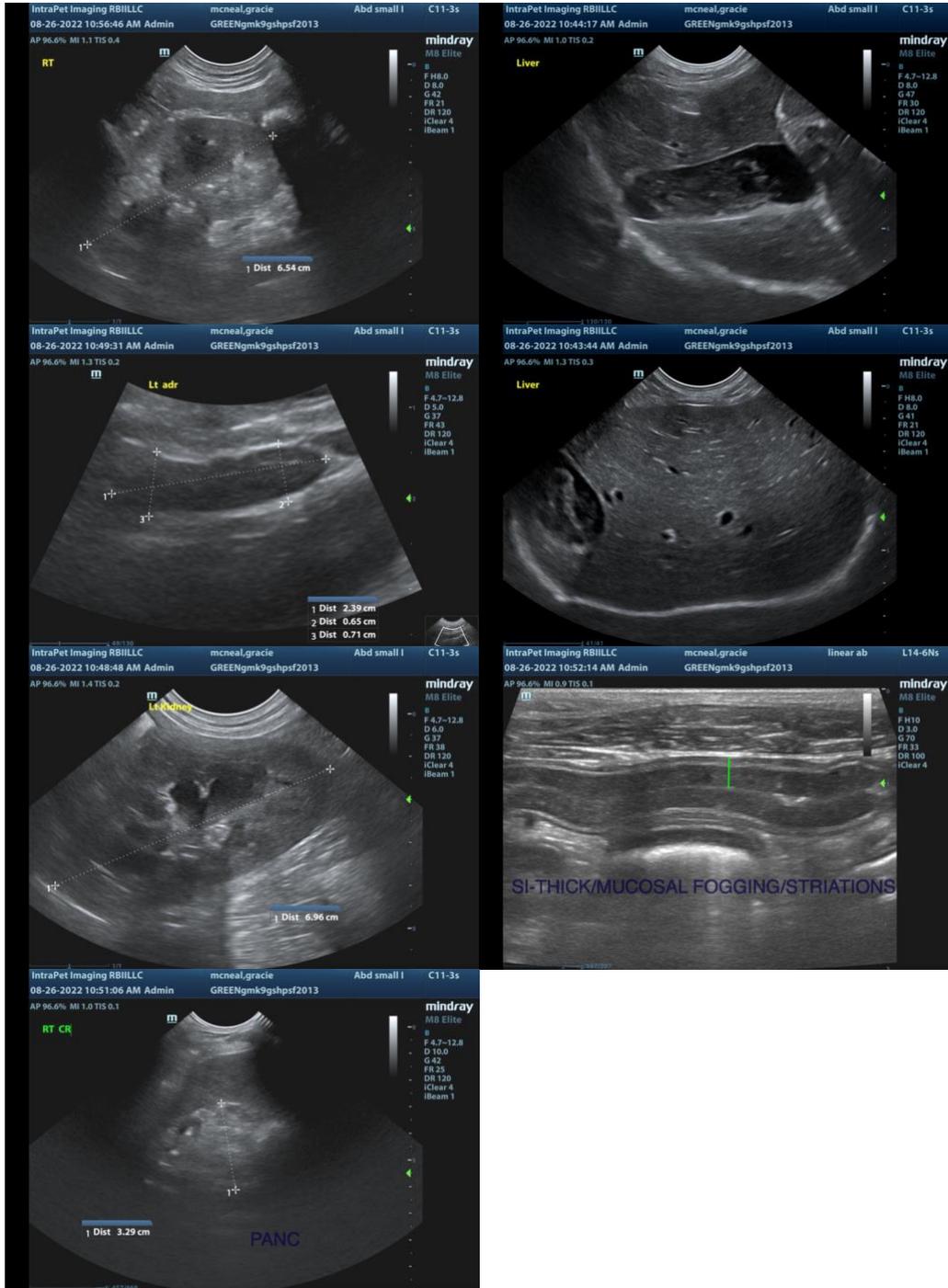
- Consider a novel protein/hydrolyzed protein diet or an ultra-low-fat diet
- I recommend a GI panel (to Texas A & M) for a qualitative PLI, TLI, cobalamin and folate to look for evidence of concurrent B-12 deficiency, etc.
- I recommend chronic probiotic therapy
- I recommend GI biopsies

The pancreas is large and severely mottled. I recommend a fine needle aspirate to rule out round cell neoplasia.

The liver is large and slightly mottled and there are some prominent mesenteric lymph nodes in the abdomen. If a questionable cytologic diagnosis is made off of a splenic aspirate, you could consider aspirating a mesenteric lymph node.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.





The information and recommendations provided are based on the images presented by the referring veterinarian. 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)  
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