

**DATE PRESENTING CLINICAL SIGNS**

9/9/22

Chronic history of progressive protein-losing enteropathy (since 2017) that was refractory to prednisone, Tylan, Vitamin B12, hypoallergenic diets (hydrolyzed), and broad-spectrum dewormings. Clinical improvement in stool quality, weight gain, and mild protein level increases occurred with a novel protein diet (rabbit). Has been managed on rabbit diet x 1+ years. Presented 1 week ago for appetite loss and lethargy with a single episode of vomiting. In-house CpL = abnormal. Hospitalized x 3 days of LRS fluids with B Complex CRI, Cerenia, and Entyce. Clinical improvement noted. Relapsed 3 days after discontinuation of the fluids.

PATIENT

Lucky Conway

SPECIES

Canine

BREED

Miniature Schnauzer

SEX

Neutered Male

AGE

10/6/09

WEIGHT

22.5 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

Festival Vet Clinic

REFERRING VET

Dr. Lomax

INVOICE

41159

Current Medications: Received Dex SP 4mg/ml, Pepcid 10mg/ml, Cerenia 10mg/ml on 9/7/2022. Was on oral Cerenia 16mg 1 PO QD until 9/2 and Entyce 1ml on 8/30/2022.

Lab Results: 8/29/2022 SpecPI in-house = abnormal. CBC = leukocytosis with increased Lymphocytes, panhypoproteinemia, increased Amylase and Lipase.

Date of Previous IntraPet Ultrasound: 3/13/18.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: STAT requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**Urinary System**

The urinary bladder is moderately distended with anechoic urine. The Bladder wall largely appears of normal thickness with no significant mucosal irregularities. In the area of the trigone, there is a small polypoid projection extending approximately 0.49 cm from the wall of the urinary bladder and it is approximately 0.36 cm wide. The mucosa in this area appears slightly irregular. The area of the cystourethral junction appears normal with no evidence of masses or calculi. The findings are most consistent with a small polypoid mass lesion. Differentials include a benign polyp or an early transitional cell carcinoma.

The prostate is large in size (1.47 cm in height in sagittal view) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The left kidney has a normal shape and size (3.7 cm) with significant pyelectasia at 0.40 cm. Overall echogenicity is slightly hyperechoic with poor 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, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.56 cm) with significant pyelectasia at 0.53 cm. Overall echogenicity is slightly hyperechoic with poor 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, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.60 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 0.59 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 spleen is normal/borderline large in size. It has an irregular shape, particularly at the tail, and there is a hypoechoic nodule visualized measuring 0.82 cm. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

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. There are numerous ill-defined hypoechoic lesions/nodules within the parenchyma, one measuring 1.84 cm x 2.3 cm. Another measures 0.51 cm in diameter.

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 a large amount of intraluminal fluid. 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 moderately increased. Duodenum wall measures 0.47 cm. Jejunum wall measures 0.30 cm. There is mucosal speckling visualized. 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 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 is scant free abdominal fluid visualized. There are occasional visible/prominent mesenteric lymph nodes. One such lymph node measures at 0.41 cm. The mesentery is diffusely mildly hyperechoic.

Other

A brief view of the heart was submitted. A scant amount of pericardial effusion is visualized. Recommend cardiac ultrasound for full evaluation.

ULTRASONOGRAPHIC FINDINGS

- Small, polypoid-like mass in the trigone of the urinary bladder. This could represent a benign polypoid lesion or a transitional cell carcinoma. Recommend urinalysis and culture.
- Large prostate – This prostate appears relatively normal, but is large for a neutered male dog. Correlate with the age of neutering. If this pet was neutered after puberty, this is likely within normal limits. If neutered early, consider a fine needle aspirate, as prostatic neoplasia cannot be ruled out.
- Decreased corticomedullary distinction in both kidneys with significant pyelectasia – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease

or interstitial nephrosis.

- Borderline large, irregular spleen with a hypoechoic nodule – There is a non-cavitated, hypoechoic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.
- Large, heterogeneous liver with occasional ill-defined hypoechoic nodule – 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. The nodules observed trend toward a more benign process but underlying neoplasia cannot be ruled out.
- 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 amount of intraluminal fluid in the stomach – Correlate with feeding/drinking history. Findings could be consistent with delayed gastric emptying/ileus or a partial outflow tract obstruction (none observed).
- Subjectively thickened small intestine with mucosal speckling – Bright mucosal speckling has been postulated to represent dilated lacteals or focal accumulations of mucus, cellular debris, etc.. in the mucosal crypts. The mild small intestinal wall changes may be a normal variant in this patient or could be consistent with an inflammatory process (e.g., inflammatory bowel disease).
- Scant free abdominal fluid.
- Scant pericardial effusion – This is unlikely to be clinically significant, but a cardiac ultrasound should be considered if underlying cardiac disease is suspected.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a small polypoid lesion in the region of the trigone. This could represent an inflammatory polyp. Recommend urinalysis and culture. If there is a positive culture, then recommended treatment for infection and reevaluation of this lesion. If there is no evidence of a mass lesion, then consider a traumatic catheterization in this area or possibly a urine BRAF test (a negative urine BRAF test is nondiagnostic).

There is significantly reduced corticomedullary distinction and moderate to severe pyelectasia in both kidneys. Recommend evaluation for pyelonephritis. No obstruction is visualized. Recommend a blood pressure evaluation and urine protein to creatinine ratio to determine if there is urine protein loss contributing to the low albumin levels.

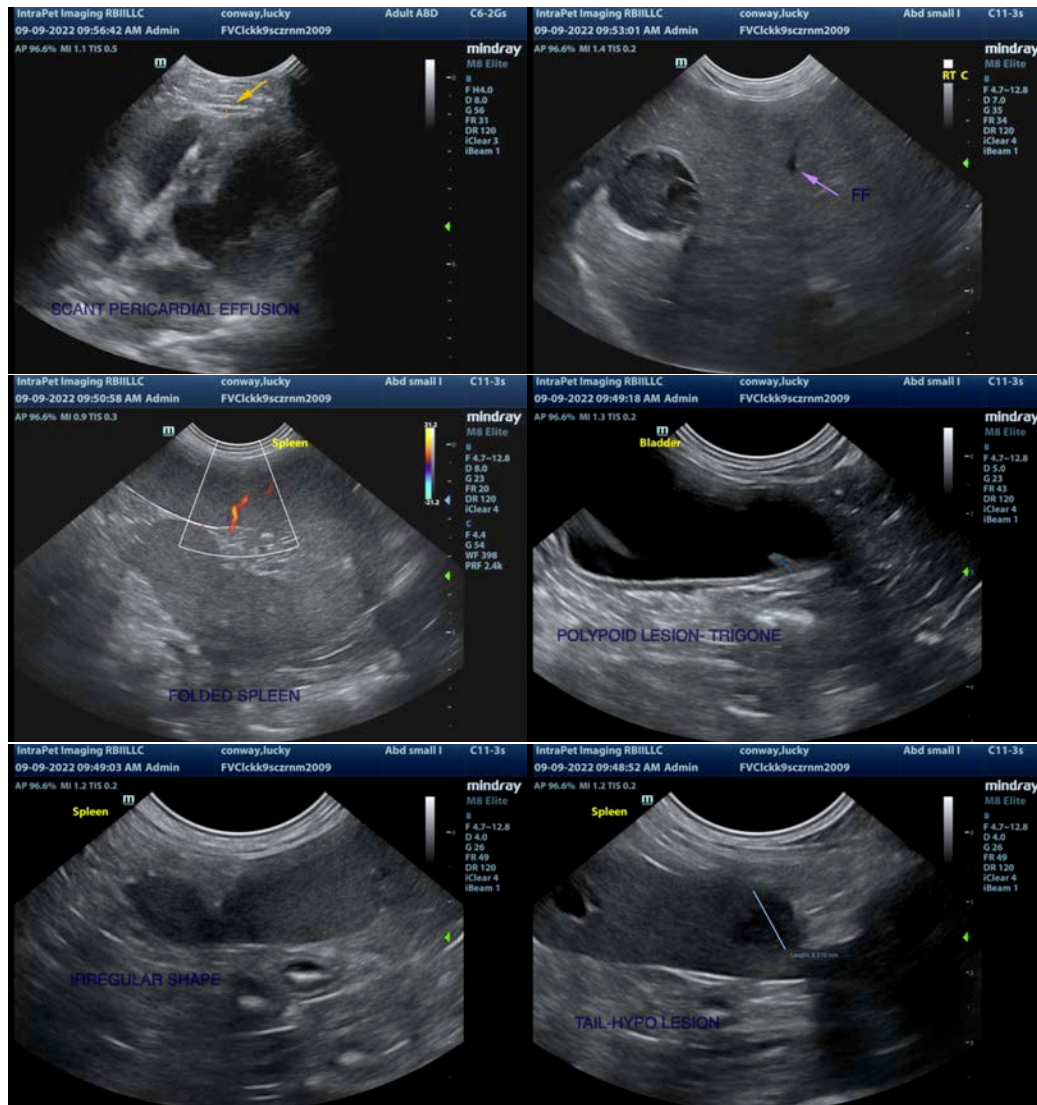
The spleen is somewhat irregular with a hypoechoic nodule. Consider a fine needle aspirate.

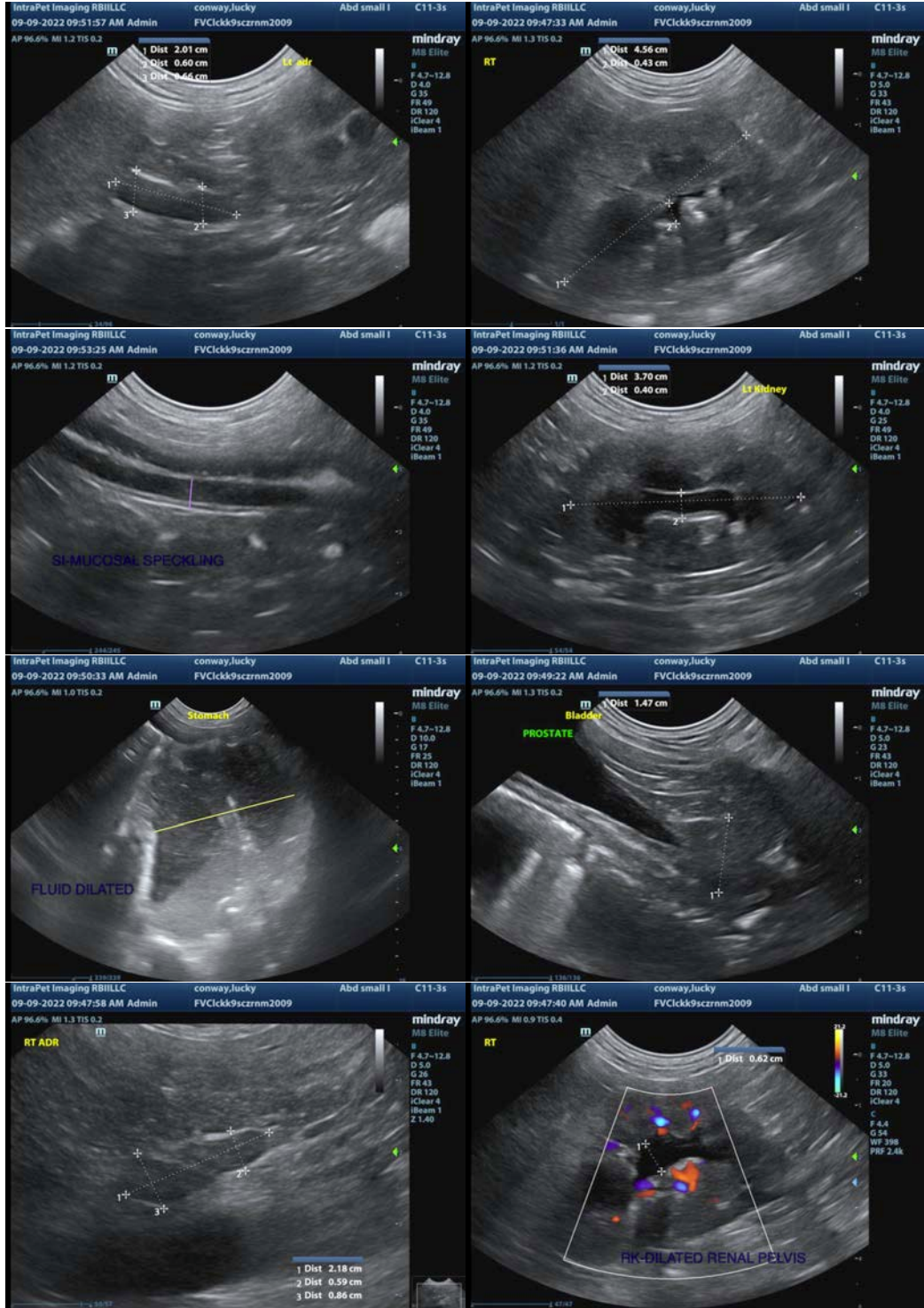
The liver is heterogeneous with ill-defined hypoechoic nodules. These changes are non-specific and trend towards more of a benign cause. Consider a liver function test to rule out lack of production contributing to the low protein levels. If bile acids are abnormal, recommend a fine needle aspirate or biopsy of the liver.

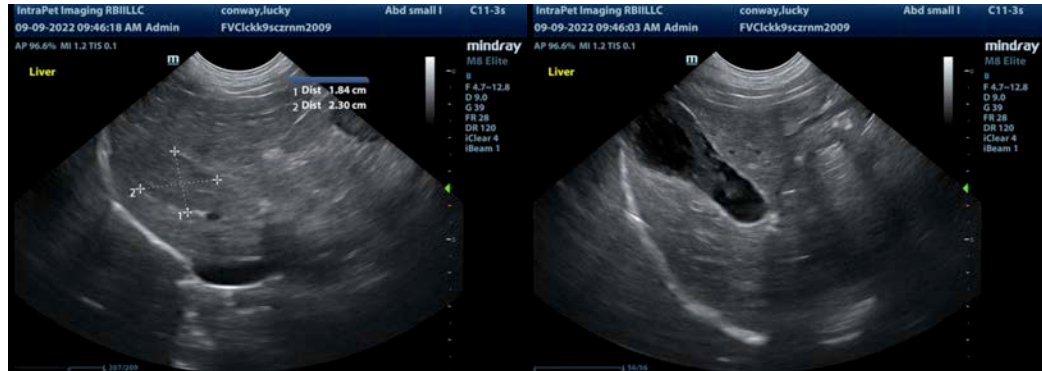
There is some mucosal speckling observed associated with the small intestine. This can be an indicator of small intestinal disease. Recommend obtaining biopsies of the small intestine, as current medical therapy is not successful.

Consider a pathologist review of the blood smear to further evaluate the lymphocytosis reported. Additionally, consultation with an oncologist may be beneficial to try to determine a diagnostic and treatment plan. A low-fat diet may be helpful in conjunction with a hydrolyzed protein or novel protein diet. I have had some success working with a nutritionist from a university and formulating a homemade low-fat/novel protein diet in these patients.

Additionally, consider a GI panel to Texas A&M for a PLI, TLI, cobalamin and folate to look for concurrent GI issues such as a cobalamin deficiency, dysbiosis, 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.

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