

**DATE PRESENTING CLINICAL SIGNS**

1/6/23 Losing weight; vomiting (resolved) and diarrhea. Decreased appetite x 1 month, grade 2/6 heart murmur newer

PATIENT

Olie Merrill Current Medications: Pimobendan 3mg BID, Tylosin powder just started, Dexamethasone INJ 0.5mg SC given 1/3/2023

Lab Results: Azotemia (BUN 66, Creat 1.9) w/ USG 1.039, UPC 7.3, Albumin decreased 2.1 (2.7-3.9)

SPECIES

Date of Previous IntraPet Ultrasound: No previous.

Canine

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: STAT requested.

Imaging Performed By: Rachel Brillhart, RDMS.

BREED

Boston Terrier

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**SEX**

Neutered Male

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

1/1/09

The prostate is normal in size (0.96 cm) 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.

WEIGHT

23 Pounds

The left kidney has a normal shape and size (5.76 cm) with pyelectasia at 0.14 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 nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

INTERPRETED BY

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

The right kidney has a normal shape and size (5.05 cm) with pyelectasia at 0.19 cm. Overall echogenicity is slightly hyperechoic with mildly reduced 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 nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

HOSPITAL NAME

Jacksonville VH

Adrenal Glands

The left adrenal gland is normal in size measuring 0.69 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.

REFERRING VET

Dr. Thai

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.

INVOICE

43976

Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

Liver

The liver is subjectively normal in size, and 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 moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and primarily anechoic. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach is dilated with a large amount of fluid and irregular shadowing material most consistent with normal ingesta and gas. 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 layering 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 thickness is moderately increased. Bowel loops follow a typical curvilinear path. Some areas have reduced detail of wall layering. Duodenum wall measures 0.54 cm. Jejunum wall measures 0.44 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 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 a scant amount of free abdominal fluid. No lymphadenopathy. The omentum appears slightly hyperechoic diffusely.

ULTRASONOGRAPHIC FINDINGS

- Mildly reduced corticomedullary distinction in both kidneys – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.
- 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.
- Large amount of ingesta visualized within the gastric lumen – Correlate with feeding history. If the patient was adequately fasted, considered such differentials as delayed gastric emptying or partial outflow tract obstruction (none observed).
- Diffusely thickened small intestine – 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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

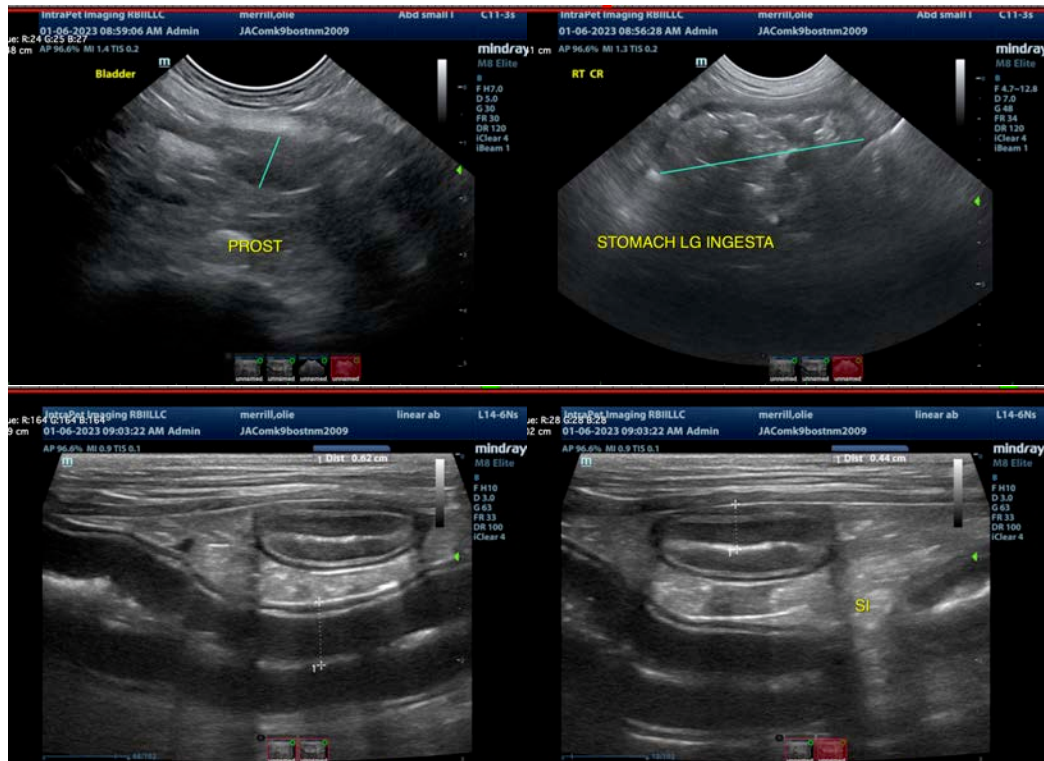
This patient has a low albumin level and a significantly elevated urine protein to creatinine ratio. This is concerning for a protein losing nephropathy. Recommend confirmation of this urine protein to creatinine

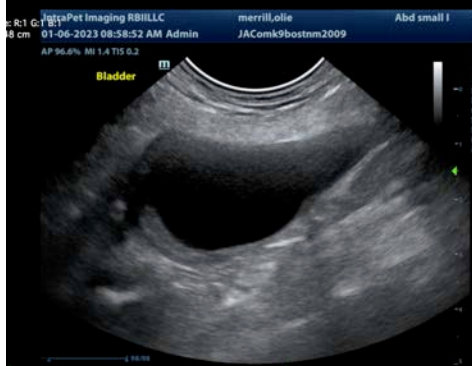
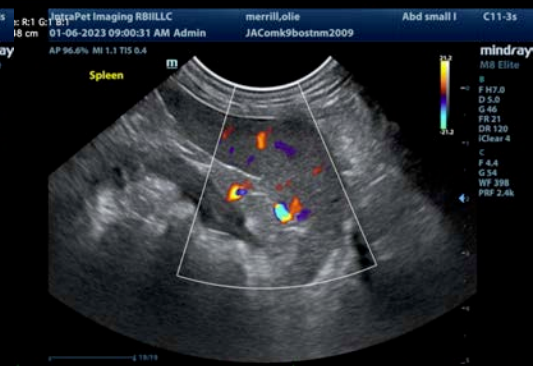
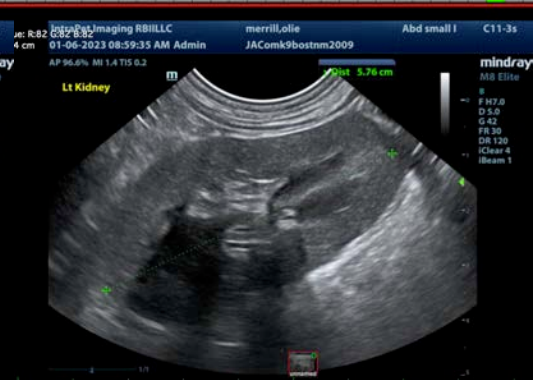
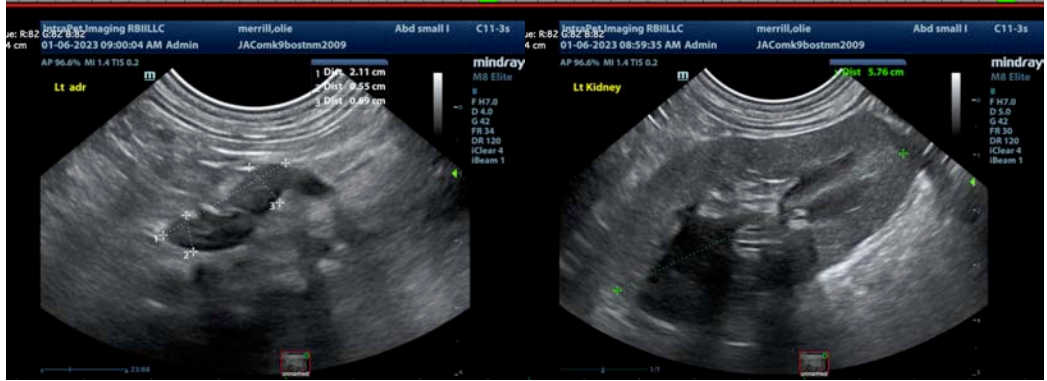
level, provided there is no active sediment on a urinalysis, and there is a negative urine culture. Additionally, consider submitting a pooled urine sample from samples caught by the owner over the day (AM, noon, and PM pulled sample). If this is confirmed, then consider further workup for proteinuria, starting with a blood pressure evaluation. An excellent discussion of this topic with treatment and diagnostic recommendations is available at www.acvim.org under their consensus statements.

Additionally, there appears to be thickened small intestine and symptoms of GI disease (diarrhea and some vomiting), so there could be concurrent GI disease contributing to the low albumin levels. Consider the following:

- 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 chronic probiotic therapy.
- If GI symptoms persist, consider obtaining GI biopsies.

The liver appears somewhat heterogeneous. This is a non-specific finding. If liver enzyme elevations are present, you could consider a liver function test and a fine needle aspirate. Otherwise, continued monitoring is reasonable.





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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