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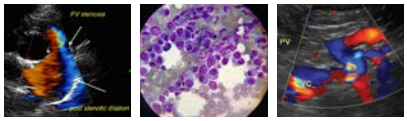

SonoPath

Clinical Sonography & Telecytology

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DATE

8/1/22

PATIENT

Felix Castro

SPECIES

Canine

BREED

Australian Cattle Dog

SEX

Neutered Male

AGE

7/21/11

WEIGHT

43 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

Everhart Vet Hospital

REFERRING VET

Dr. Hays

INVOICE

40021

PRESENTING CLINICAL SIGNS

Patient presented on Sunday, July 14 for diarrhea, some vomiting, decrease in appetite, duration approx 1wk. At that time there were a number of stressful changes at home, including multiple COVID exposures. Patient treated with metro and propectalin, pepcid at night, bland diet. Rechecked 7/24 for continued diarrhea, dec appetite, o had difficulty getting meds in. No vomiting at that time, diarrhea changed to mucoid. drinking well. KeyScreen showed no intestinal parasites. Tried p on Tylan, some additional vomiting that week after starting tylan, so owner discontinued. Vomiting continued this weekend. Labs showed ALB minimally decreased at 2.0, WBC increased at 32k with 25k neuts

Current Medications: None listed.
Lab Results: ALB minimally decreased at 2.0, WBC increased at 32k with 25k neuts. KeyScreen fecal PCR neg for intestinal parasites
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

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.

Prostate is normal in size, echotexture and echogenicity for a neutered male.

The right kidney is normal in size (6.17 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.

The left kidney is normal in size (5.67 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.

Adrenal Glands

The right adrenal gland is normal in size (2.9 cm long x 0.82 cm at the cranial pole and 0.58 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 (2.6 cm long x 0.57 cm at the cranial pole and 0.69 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

Spleen

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). A 0.6 cm hypoechoic mid body nodule is present, non-capsule disrupting. Splenic vasculature appears normal.

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. An incidental 1.2 cm cyst is noted. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as 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 mildly diffusely thick with normal layering intact. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease.

Small intestine is diffusely mildly thick with a relatively thick mucosa compared to other layers. Normal wall layering is preserved; however, the mucosa is more echogenic than normal and contains hyperechoic striations perpendicular to the lumen. In the mid abdomen there is a focal bowel loop with early emerging loss of layering noted. The lumen is empty with no evidence of obstruction or foreign material.

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 a scant amount of anechoic free fluid and enhanced hyperechoic fat and mesentery around the thickest bowel loop that is experiencing loss of layering.

Mesenteric lymphadenopathy is also appreciated, rule outs for which include both reactive lymphadenopathy as well as infiltrative neoplastic disease.

PRIMARY FINDINGS

- **Lymphangiectasia** – Small bowel findings are most consistent with lacteal dilation. These findings can be observed with protein-losing enteropathies caused by either primary lymphangiectasia or primary infiltrative inflammatory disease with secondary lymphangiectasia. Infiltrative neoplasia is possible but considered less likely. Histopathology is necessary to definitively determine underlying cause. Given the early/emerging focal loss of layering described above, infiltrative neoplasia has to be considered as an underlying cause for the suspected protein losing enteropathy. However, benign lipogranulomatous masses can occur with lymphangiectasia despite an aggressive ultrasonographic appearance.

- Mild gastric wall thickening

- **Mesenteric lymphadenopathy** – Both reactive as well as infiltrative neoplastic differentials have to be considered.

SECONDARY FINDINGS

- **Hypo to anechoic splenic nodule** – likely represents a benign lesion such as a cyst, hematoma, nodular hyperplasia, extramedullary hematopoiesis, etc., however while considered less likely, infiltrative neoplasia can mimic benign lesions, and cannot be ruled out.

- **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.

- Incidental hepatic cyst

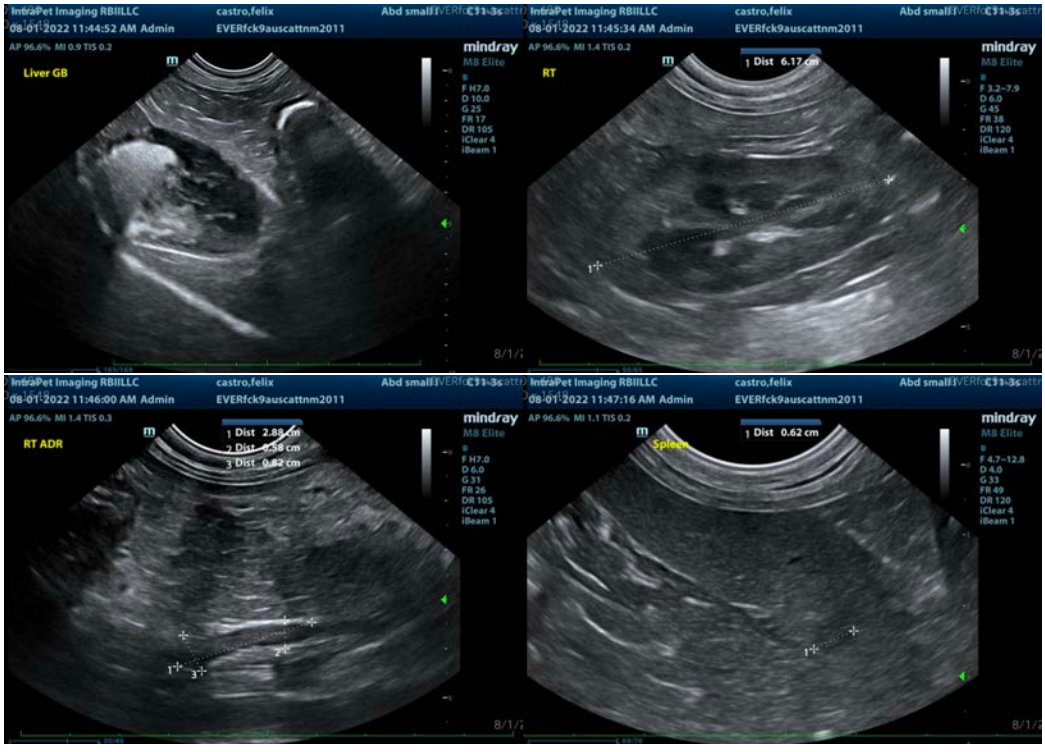
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

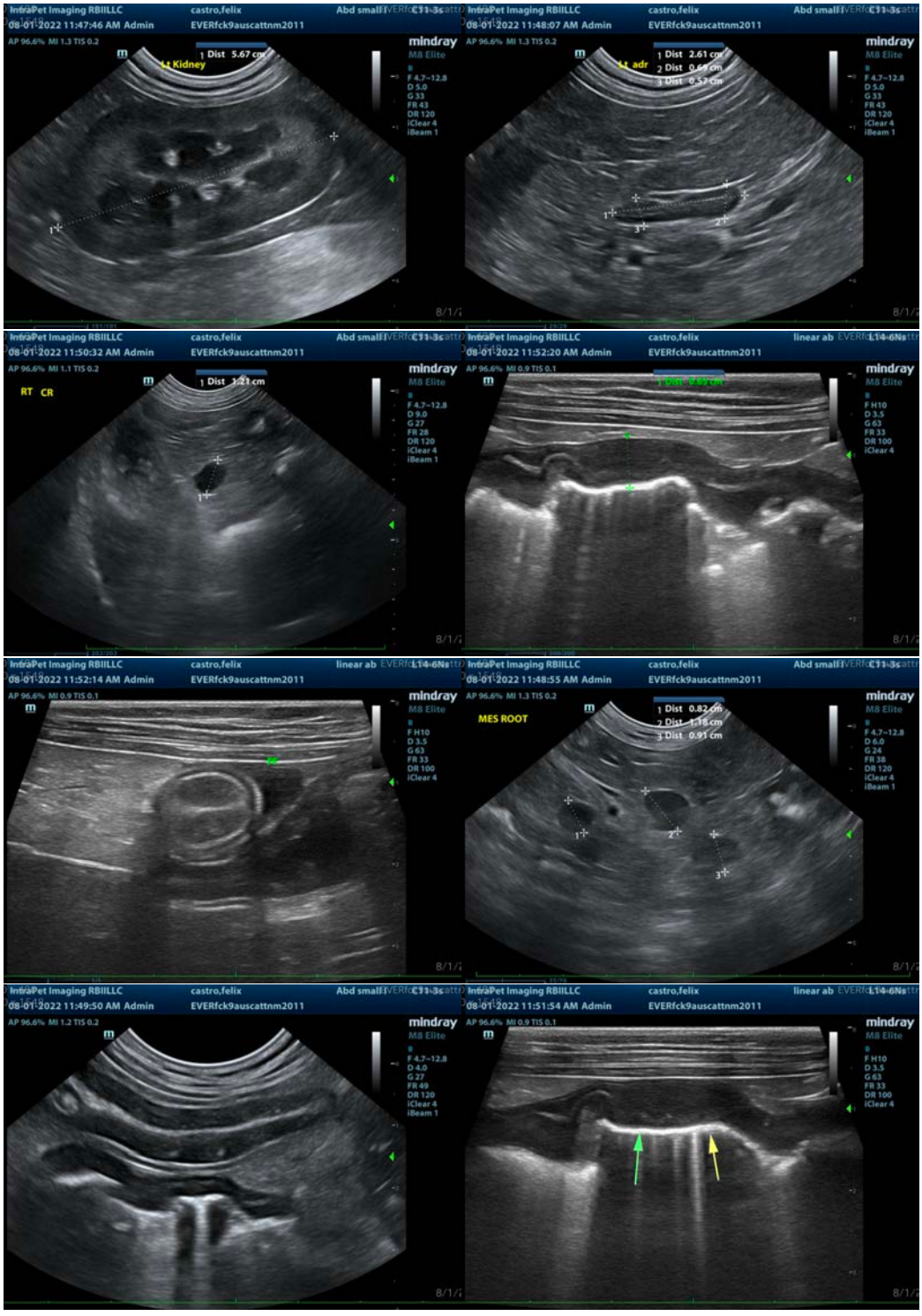
Given the hypoalbuminemia, which is most consistent with GI loss given the ultrasound changes, to be complete and rule out concurrent proteinuria, a urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

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.

Ideally, especially given the emerging loss of layering, biopsies of the GI tract are recommended to definitively diagnose and therefore manage the infiltrative bowel process.

If biopsies cannot be obtained safely due to low albumin or patient stability, etc., empirical therapies could include diet change to an ultra-low fat diet, empirical deworming with a 5 day course of Panacur, cobalamin supplementation (unless cobalamin level is evaluated and supplementation is not warranted) a probiotic and prednisolone (if not contraindicated based on patient contraindications, co-morbidities, etc.). Calcium monitoring, and supplementation if necessary, is also recommended.

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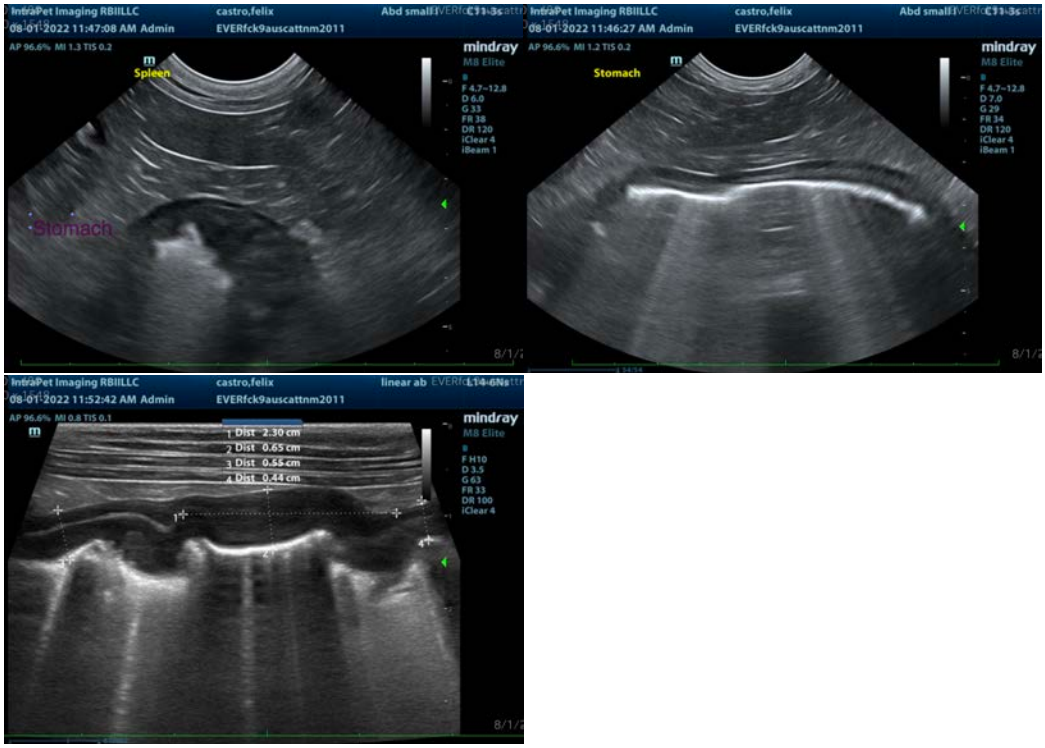

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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