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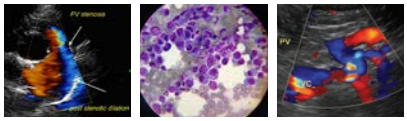

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DATE

1/5/22

PATIENT

Ruby Wickstrom

SPECIES

Canine

BREED

Dalmatian

SEX

Spayed Female

AGE

4/12/08

WEIGHT

38.6 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

Westminster VH

REFERRING VET

Dr. Hall

INVOICE

33995

PRESENTING CLINICAL SIGNS

History: Patient presented on 12/30 for a possible urinary tract infection. Patient has a history of incontinence that has been well controlled with Proin. Recently pet has had an increased urgency and cannot make it as long between bathroom breaks. Pet will urinate in the home which is odd. At least one of the owners noted blood in the urine as well as a foul odor. On PE pet was found to be underweight, with an ideal BW likely around 50-55lbs. Pet had a grade 2/6 left sided cardiac murmur which has been noted historically. Pet had severe diffuse muscle wasting but ambulatory. A mild amount of dried mucoid discharge was noted around the vulvar skin as well. Pet had a history of elevated liver enzymes which has returned to normal. When discussing bloodwork results with owner, owner was appreciating some vomiting from pet at home but owner switch to smaller meals TID and that has since resolved. Abdominal US was recommended to better evaluate elevated lipase causes as well as pet's significant weight loss.

Current Medications: Clavamox 250mg PO BID started 12/30/21
Gabapentin 100-200mg PO q8-12hrs (refilled 12/30/21 but started 09/2021), Proin ER 74mg SID (originally placed on Proin 07/2019-owner discontinued, it was restarted 03/2020 and has been administered since).
Lab Results: 12/30/21: CBC: eosinophils-0.069K/uL (0.07-1.49); Platelet clumps noted on slide and appear adequate on blood film); Chem: Albumin: 2.4g/dL (2.7-3.9); Lipase: 1,196U/L (0-250); T4: 1.4ug/dL; UA: USG: 1.035; pH: 7.5; Protein 1+; Ketones: trace; WBCs: 75-100HPF; Marked rods noted; Epi Cells 1+. Attached separately.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Gabapentin.
Stat Report: Not requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

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.

The left kidney has a normal shape and size (5.92 cm) and a non-obstructive nephrolith measuring 0.57 cm. Overall echogenicity is slightly hyperechoic with mildly reduced 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, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.84 cm) with a non-obstructive nephrolith measuring 0.38 cm. Overall echogenicity is slightly hyperechoic with mildly reduced 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, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is large in size measuring 1.18 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/borderline large in size measuring 1.1 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 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 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. 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 is dilated with a moderate/large amount of fluid and irregular shadowing material most consistent with normal ingesta and gas. It measures at a normal thickness of 0.49 cm. 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 appears subjectively, mildly increased. Bowel loops follow a typical curvilinear path with distinct wall layering. Duodenum wall measured 0.57 cm. Jejunum wall measured 0.45 cm. There is occasional mild mucosal speckling visualized. 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 prominent and mottled compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen
Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

Other
The uterine stump is visualized and appears mildly mineralized with no surrounding inflammation evident.

PRIMARY FINDINGS

- Bilateral adrenomegaly – The bilateral adrenomegaly could be consistent with bilateral hyperplasia (e.g., secondary to pituitary-dependent hyperadrenocorticism), bilateral infiltrative neoplasia, inflammatory adrenal disease, other. Correlation with clinical findings is recommended.

- Large, 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.

- Diffusely thickened small intestine with mild mucosal speckling – The bowel wall thickening could be consistent with inflammation, edema, or infiltrative neoplasia. Bright mucosal speckling has been proposed to represent dilated lacteals or focal accumulation of mucus, cellular debris etc. in the mucosal crypts of the small intestine.

- Moderately fluid distended stomach – Correlate with feeding history and abdominal radiographs. If the patient was adequately fasted, possible differentials include delayed gastric emptying or partial outflow tract obstruction (none visualized).

SECONDARY FINDINGS

- Mildly reduced corticomedullary distinction in both kidneys with non-obstructive nephroliths – The bilateral renal findings are consistent with age-related change.

- 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.

- Prominent, mineralized uterine stump – This is likely an incidental finding.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No abnormalities were visualized associated with the lower urinary tract. Based on urinalysis results, recommend a culture and appropriate treatment for cystitis. Based on muscle wasting described, etc., make sure this patient can adequately empty the bladder, posture to urinate, etc.

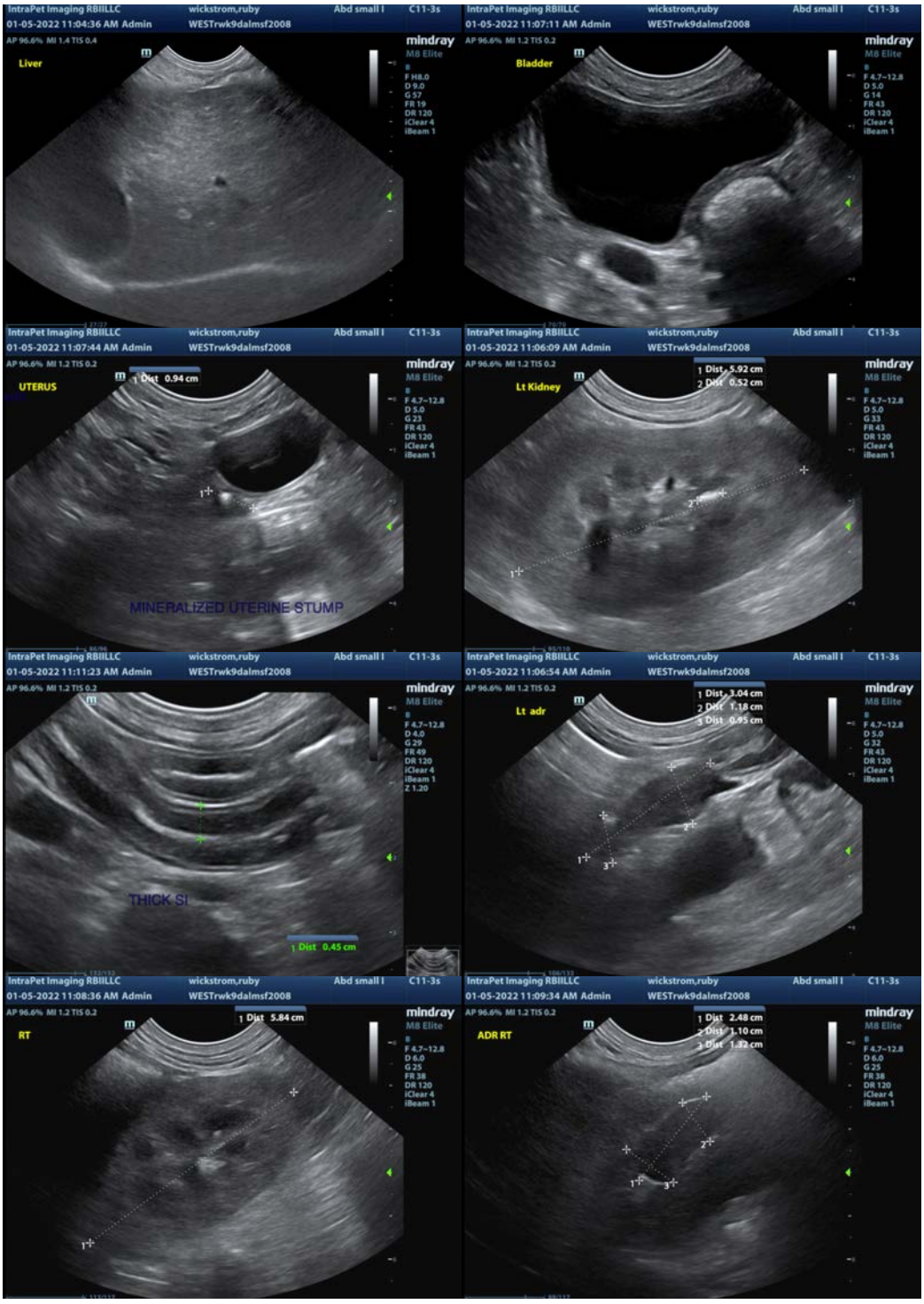
Additionally, the adrenal glands are large for a dog this size, and the liver is somewhat heterogeneous. This could be an incidental finding, could be consistent with Cushing's if symptoms are present, or could be seen with primary liver disease.

- Consider a liver function test to rule out protein loss from liver disease.
- Consider a fine needle aspirate of the liver.
- If signs of Cushing's are present, you could consider adrenal function testing.

Additionally, there are small intestinal changes and a very dilated stomach. I suspect delayed gastric emptying secondary to small intestinal disease, but a partial obstruction cannot be ruled out. Consider a GI panel to Texas A&M for a qualitative PLI, TLI, cobalamin and folate to further evaluate the pancreas and small intestinal changes.

- Consider a hydrolyzed protein/novel protein diet.
- Consider obtaining GI biopsies to further evaluate.
- To further evaluate the stomach dilation, you could consider a barium swallow to follow ingest leaving the stomach. This sometimes will outline the outflow tract better on radiographs, or upper GI endoscopy could also evaluate this area.
- Promotility medications such as Metoclopramide could be considered.

Based on the low albumin levels reported in the attached bloodwork, a protein losing enteropathy, nephropathy or liver disease is suspected. Some of the above recommendations will screen for liver dysfunction, suspected GI disease. Once the urinary tract infection has cleared, recommend a urine protein/creatinine ratio to look for underlying renal protein loss. Recommend 3-view thoracic radiographs to rule out concurrent intrathoracic disease.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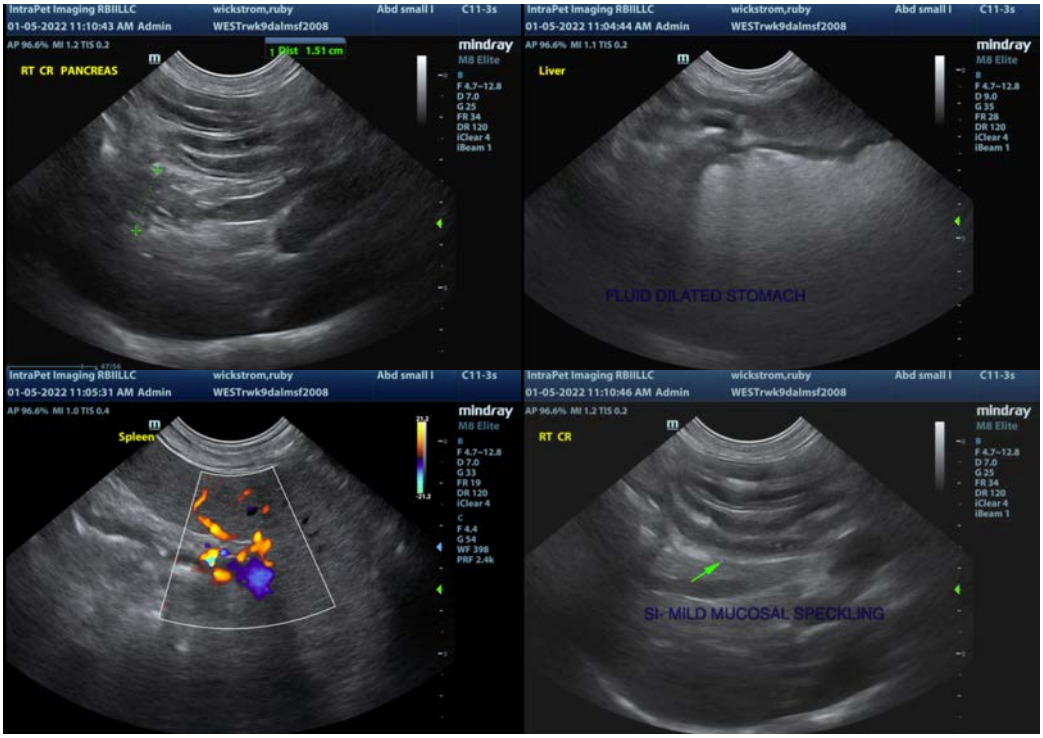

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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