IMAGING PERFORMED BY

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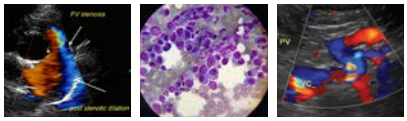

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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DATE

4/19/23

PATIENT

Gigi Derullieux

SPECIES

Canine

BREED

Bichon

SEX

Spayed Female

AGE

2015

WEIGHT

9.7 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

HOSPITAL NAME

Mount Airy AH

REFERRING VET

Dr. Rile

INVOICE

46781

PRESENTING CLINICAL SIGNS

P presented with a 2 week history of weight loss, 3-4 day history of PUPD, weakness, 1 day history of bloody diarrhea and vomiting, decreased appetite. On PE: pale MM, mild dehydration, diffuse muscle atrophy, mild abdominal distension with possible tenderness. mild cornea edema and diffuse partial cataract OD; present x ~ 3 months and stable per O.

Current Medications: hospitalized post ultrasound, no medications prior
Lab Results: abnormal cPL, elevated amylase/lipase, hyperglycemia (513), SAP>2000, ALT = 234, GGT = 44, decreased Na, Cl (127, 3.7), hypocalcemia (6.2), anemia (rbc = 3.4 mill/ul, PCV = 24%)
mild lymphopenia & monocytosis, normal platelets @ 286,000/ul, normal PT, PTT.

Radiographs:3 view thorax – unremarkable
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Declined at this time.
Imaging Performed By: Stephanie Pearce RDCS, RVT.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with occasional echogenic non-shadowing debris, most consistent with exfoliated cells, mucous and/or small blood clots. Both sterile inflammation as well as urinary tract infection can also present with echogenic debris. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

The right kidney is normal in size (5.26 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 mineral or infarcts observed. Pyelectasia noted measuring 0.18 cm in the transverse view. A hyperechoic band parallel to the corticomedullary border is present.

The left kidney is normal in size (4.59 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 mineral or infarcts observed. Pyelectasia noted measuring 0.30 cm in the transverse view. A hyperechoic band parallel to the corticomedullary border is present.

Adrenal Glands

The right adrenal gland is normal in size (1.58 cm long x 0.46 cm at the cranial pole and 0.48 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 (1.85 cm long x 0.58 cm at the cranial pole and 0.48 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). No focal nodules or masses are observed. Splenic vasculature appears normal.

Liver
Liver is subjectively enlarged (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. Parenchyma is diffusely hyperechoic characterized by less prominent than normal portal vein walls and increased echogenicity relative to the spleen and falciform fat. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as mild 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 visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent. There is also quite a bit of echogenic reverberation artifact from gas, partially limiting full evaluation of the gastric wall.

The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents appear to be liquid.

Pancreas
The observed pancreas is prominent (enlarged) in size, hypoechoic to surrounding tissue and irregular in shape with a swollen undulating contour. Enhanced hyperechoic ill-defined surrounding fat is noted. There is a scant amount of free fluid adjacent to the pancreas.

Free Abdomen
There is a scant amount of anechoic free fluid as described above.

There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

- Acute pancreatitis

- **Hyperechoic hepatomegaly -** This appearance is non-specific and most consistent with a benign steroid (endocrine) or vacuolar hepatopathy or reactive or idiopathic hepatopathy. Inflammatory and/or infiltrative disease (such as round cell neoplasia) are also possible but considered less likely.

- **Mild 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.

- **Bilateral medullary rim sign -** This finding is of unknown clinical significance and can be a normal variant, often idiopathic. Medullary rim sign can be present with renal disease including FIP, lymphoma, hypercalcemic nephropathy, Leptospirosis, tubular disease, other and should be interpreted in combination with other more specific indications of kidney disease such as

isosthenuria, proteinuria, azotemia, etc. This is a common incidental finding in patients with diabetes mellitus.

- **Mild bilateral pyelectasia –** Differentials for pyelectasia include pyelonephritis, diuresis, congenital malformation or ureteral or lower urinary tract obstruction.

SECONDARY FINDINGS

- Urinary bladder debris

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

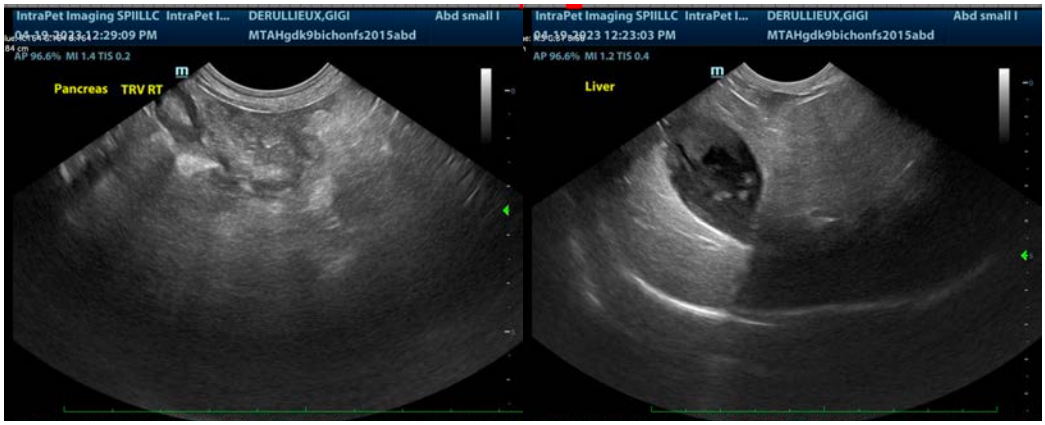
The majority of the findings described above other than acute pancreatitis are consistent with this patient's newly diagnosed diabetes mellitus. If not already evaluated, and to look for evidence of ketones, etc., a urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

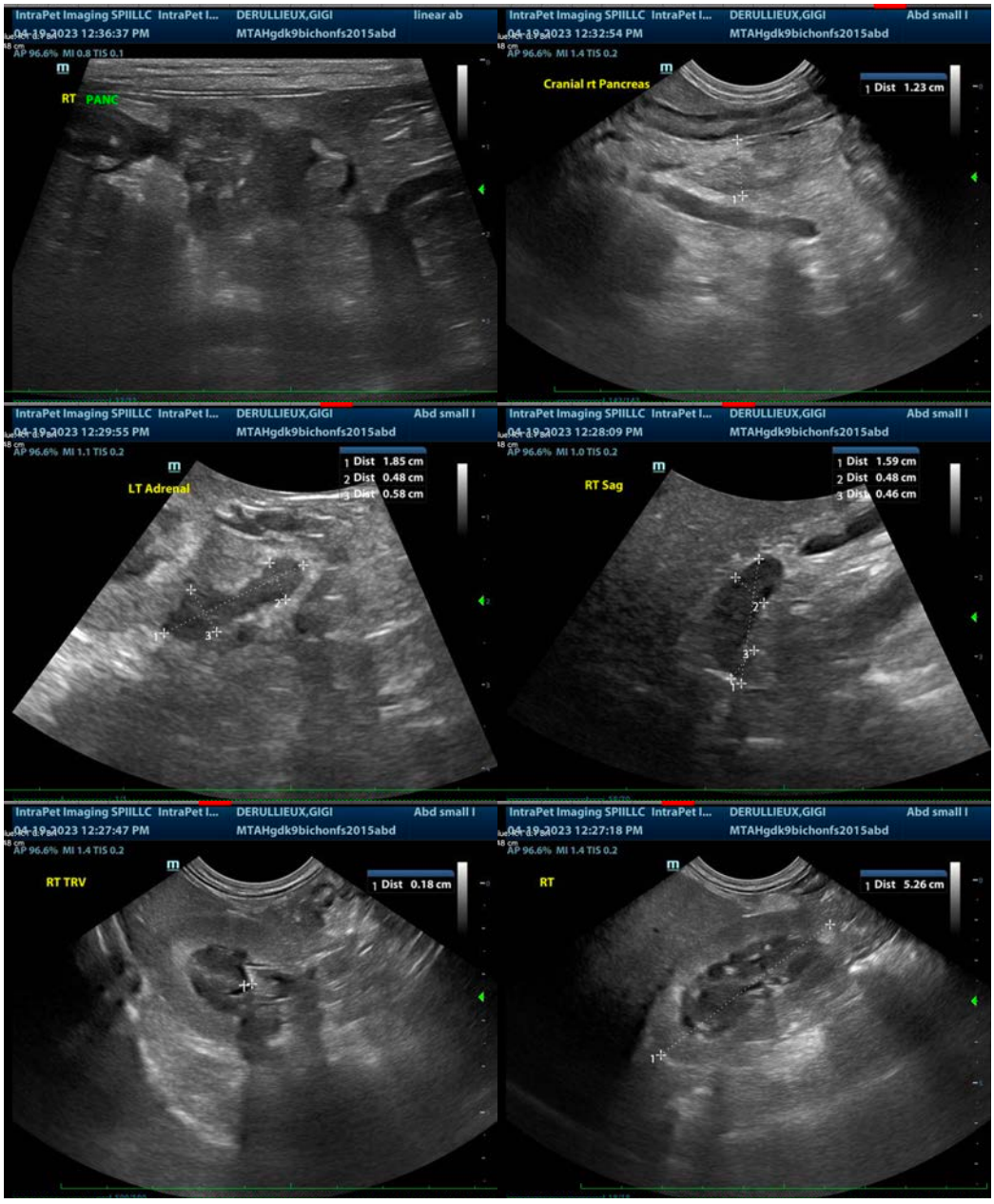
Additionally, a quantitative PLI is recommended. However, given this patient's concurrent gastrointestinal signs, a full gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.

In the meantime, in addition to beginning short-acting insulin therapy while closely monitoring blood sugars, ketones, etc. for improvement versus progression, medical management of pancreatitis with anti-emetics, gastroprotectants, appetite stimulants or nutritional support as needed, pain management, broad spectrum antibiotics, and fluid therapy is recommended. If possible, a fresh frozen plasma transfusion and hyperbaric oxygen therapy (HBOT) could be beneficial. Monitoring of the pancreas with power doppler is recommended to identify possible necrosis as well as other potential sequelae such as abscesses, etc. Once ketones (if present) have resolved and patient is eating well, no longer vomiting, etc., transition to a longer acting insulin to ultimately be used at home can be implemented.

There is not a definitive ultrasonographic explanation for this patient's anemia. However, the reported hemorrhagic gastrointestinal signs may be resulting in anemia. If gastrointestinal signs persist beyond management of pancreatitis, diabetes, suspect DKA, then further evaluation of the gastrointestinal tract would be warranted at that point.

In the meantime, empirical deworming with a 5-day course of Panacur, in addition to the treatment recommendations stated above, is recommended.

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AP 96.6% MI 0.8 TIS 0.1
RT PANC
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Cranial rt Pancreas
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RT
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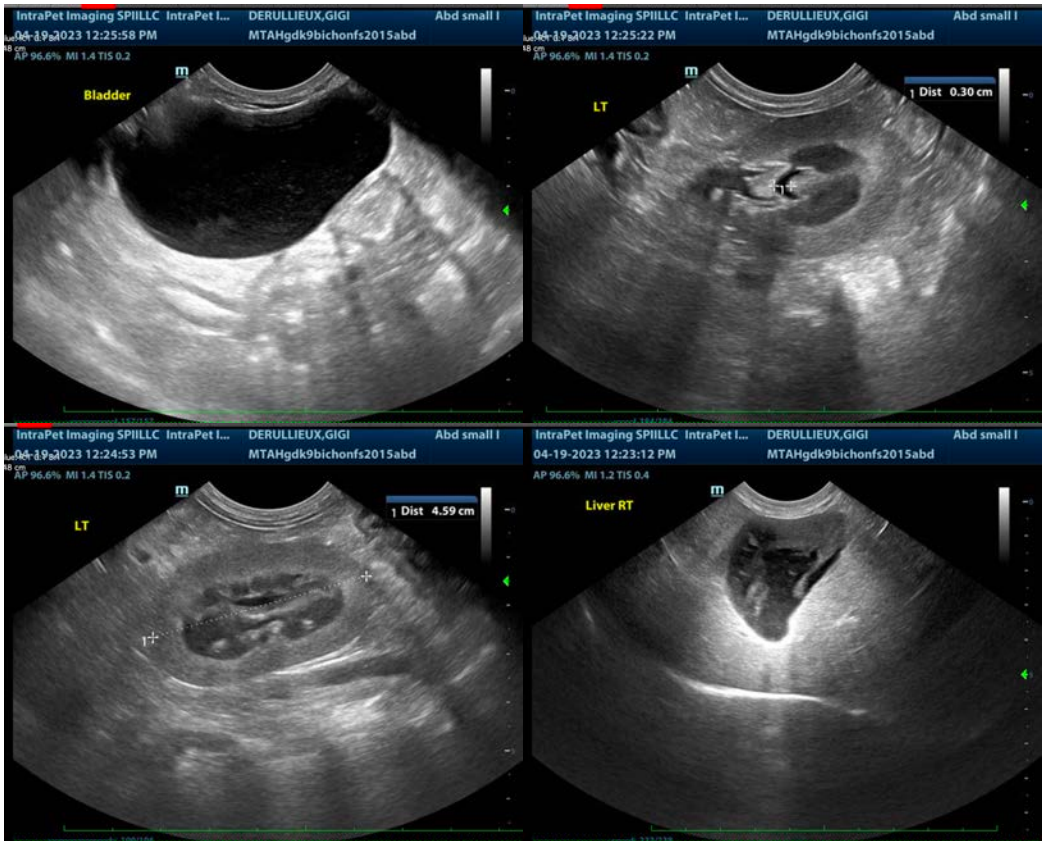

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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