

**DATE**

5/2/22

PRESENTING CLINICAL SIGNS

Long term history of CKD, recently diagnosed with pancreatitis. P was seen on 4/7 for vomiting and diarrhea. Current Medications: Currently taking Propectalin and low fat GI food. Lab Results: CPL + 4/7/22. CBC/Chem NSF on 3/8/22. UA NSF 3/8/22. Date of Previous IntraPet Ultrasound: No previous. Sedation: Declined. Stat Report: Not requested. Imaging Performed By: Rachel Brillhart, RDMS.

PATIENT

Jazzmine Vaden Diaz

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**BREED**

Mix

Urinary System

The urinary bladder is adequately distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, cystoliths, polyps or a mass.

SEX

Spayed Female

Kidneys

The **left** kidney measures 4.85 cm (4.8 cm – 6.7 cm). The capsule is smooth, however, the cortex is mildly hyperechoic and a mild to moderate loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, without evidence of pyelectasia. Small nephroliths at the level of the diverticulae and pelvis are suspected based on subtle acoustic shadowing. Blood flow is mildly decreased. The surrounding mesentery is not hyperechoic.

AGE

7/13/05

WEIGHT

37 lbs

The **right** kidney measures 4.91 cm (4.8 cm – 6.7 cm). The capsule is smooth, however, the cortex is mildly hyperechoic and a mild to moderate loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, without evidence of pyelectasia. Small nephroliths at the level of the pelvis are suspected based on subtle acoustic shadowing. Blood flow is mildly decreased. The surrounding mesentery is not hyperechoic.

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

Aortic bifurcation/trifurcation

No abnormalities observed.

HOSPITAL NAME

Banfield Timonium

Adrenal Glands

The **left** adrenal gland measures 0.74 cm at the cranial pole, 0.66 cm at the caudal pole and 2.19 cm in length. Adrenomegaly is present. The caudal pole is rounded and suggestive of a nodule, however, a mass is not evident. No abnormalities are noted with the gland's overall echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

REFERRING VET

Dr. Borrison

The **right** adrenal gland measures 0.75 cm at the cranial pole, 0.89 cm at the caudal pole and 1.82 cm in length. Adrenomegaly is present, and both poles are rounded and "plump", however, a mass is not evident. No abnormalities are noted with the gland's overall echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

INVOICE

30081

Spleen

The spleen is within normal limits in size and the capsule is smooth. A few hypoechoic nodules are observed mid-body, for example, 5.3 mm in diameter x 8.0 mm in length and 4.0 mm in diameter x 5.1 mm in length. It has a subtle, but diffuse, mottled appearance.

No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver

There are no obvious signs of hepatomegaly and its borders are smooth and sharp to mildly rounded. The liver is mildly, but diffusely hyperechoic. It has a diffuse, coarse, and granular echotexture. A subtle hypoechoic nodule is noted in the liver, in addition to a mildly hyperechoic region, measuring 2.3 cm in diameter x 4.3 cm in length. Perivascular cuffing is observed surrounding some of the larger blood vessels this may be associated with fat fibrosis and mineralization. Congestion of the hepatic vessels is not appreciated.

The gallbladder wall is within normal limits in size, thickness and echogenicity. A moderate amount of echogenic material (sludge) is present within the lumen. The sludge is quite hyperechoic, and small "dirty" shadows are observed, suggestive of mineralized sludge. The sludge is free floating and has settled by gravity at the neck of the GB. Inspissated bile is also observed and is adhered to the intramural wall. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction.

Gastrointestinal

A large amount of ingesta and fluid are present in the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

Duodenum: mild fogging of the mucosa is present.

The small intestinal wall thickness is within normal limits and the definition of the wall layers is preserved. The ileo-cecal-colic junction is within normal limits. Abnormally dilated loops of bowel are not observed. The colonic wall is not thickened and mural detail is considered normal.

There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction in the gastrointestinal tract.

Pancreas

The pancreas has a mildly coarse echotexture. These changes are most likely due to nodular hyperplasia and areas of fibrosis, which are considered secondary to age and possibly to previous episodes of pancreatitis, respectively. Signs of active pancreatitis or neoplasia are not appreciated. Note, a large amount of gas is present in the surrounding GI tract, which may have precluded an in-depth evaluation of the pancreas.

Other

Lymph nodes

No abnormalities are observed

Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- Moderate renal changes are present, which are suggestive of age related degeneration. However, glomerulonephritis may be contributing to some of the abnormalities observed. Pyelonephritis cannot be excluded based on the absence of sonographic abnormalities. Furthermore,

mineralizations and very small nephroliths may act as a chronic nidus for infection, which could predispose an individual to urinary tract infections.

- The pancreatic changes are suggestive of nodular hyperplasia and areas of fibrosis, which are attributed to age related changes, including previous episodes of pancreatitis, respectively. Signs of active pancreatitis or neoplasia are not appreciated. Note, a large amount of gas is present in the surrounding GI tract, which may have precluded an in-depth evaluation of the pancreas.
- Bilateral adrenomegaly may occur be due to adrenal hyperplasia secondary to chronic illness, which is a form of stress. Pituitary dependent hyperadrenocorticism is also possible, but considered less likely given the absence of clinical signs, or clinical signs have not yet developed. A nodule located at the caudal pole of the left gland may be associated with a benign adenoma. It does not possess criteria of malignancy. Further diagnostic tests are not necessary if a patient is not demonstrating clinical signs of HAC. However, an evaluation an arterial blood pressure and a urine protein: creatinine ratio (to obtain baseline results) is recommended.
- The mild, but diffuse hyperechogenicity of the liver, and mildly coarse or granular echotexture may be due to vacuolar and reactive hepatopathies, respectively. Many differential diagnoses may be associated with a vacuolar hepatopathy, including stress, chronic illness, and a recent bout of pancreatitis. Other differential diagnoses may include, hepatitis, cholestasis and cholangitis/cholangiohepatitis, as well as cholecystitis due to an secondary bacterial infection ascending from the GI tract. The hypoechoic nodules observed may be due nodular hyperplasia.
- The sludge in the gallbladder is quite hyperechoic, and small “dirty” shadows are observed, which is suggestive of mineralization. There are no signs of an obstruction. The presence of sludge in the gallbladder is most likely clinically insignificant, however, some dogs may show clinical signs of gastroesophageal reflux disease (GERD), therefore, obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on the patient’s history.
- The splenic changes may be due to extramedullary hematopoiesis, splenitis, and reactive hyperplasia. Neoplasia, such as lymphoma or mast cell tumour, or other round cell tumour, is considered less likely, but cannot be excluded. A fine needle aspirate would be required to obtain a definitive diagnosis.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Recent history of pancreatitis. An obvious mass is not identified. Although pancreatitis is not evident, smoldering subclinical pancreatitis may be persisting, therefore, if Jazzmine’s appetite has not returned to normal, one could consider administration of analgesia for visceral pain, such as buprenorphine or methadone.

Chronic renal disease (IRIS stage unknown). A urine culture and sensitivity is recommended to rule out pyelonephritis.

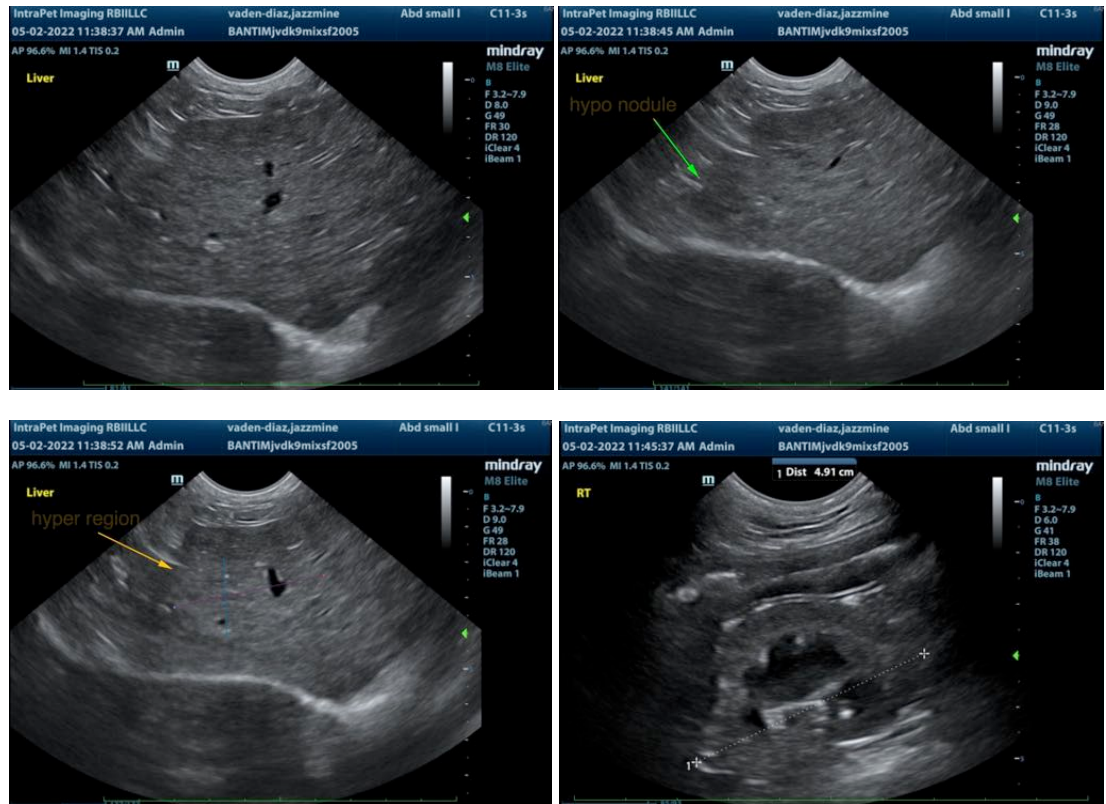
If negative, a urine protein: creatinine ratio is suggested.

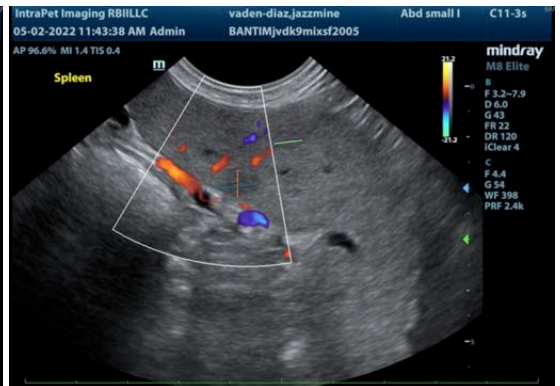
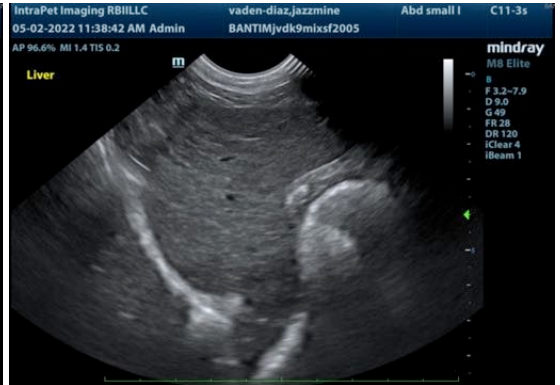
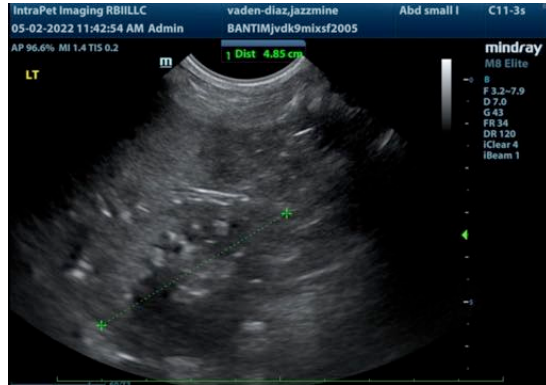
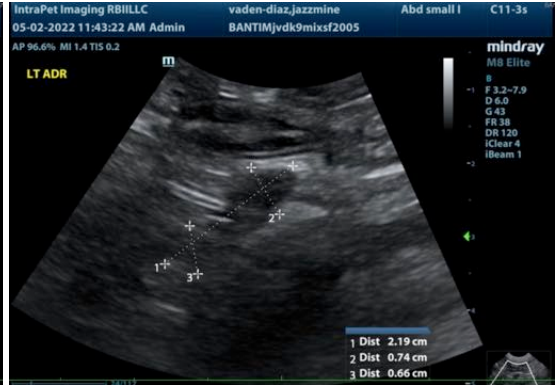
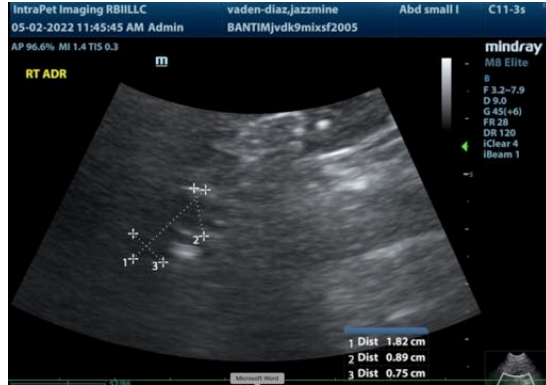
A fundic exam is also recommended, as is an evaluation of the blood pressure, ideally in the presence of the client to minimize the effects of stress.

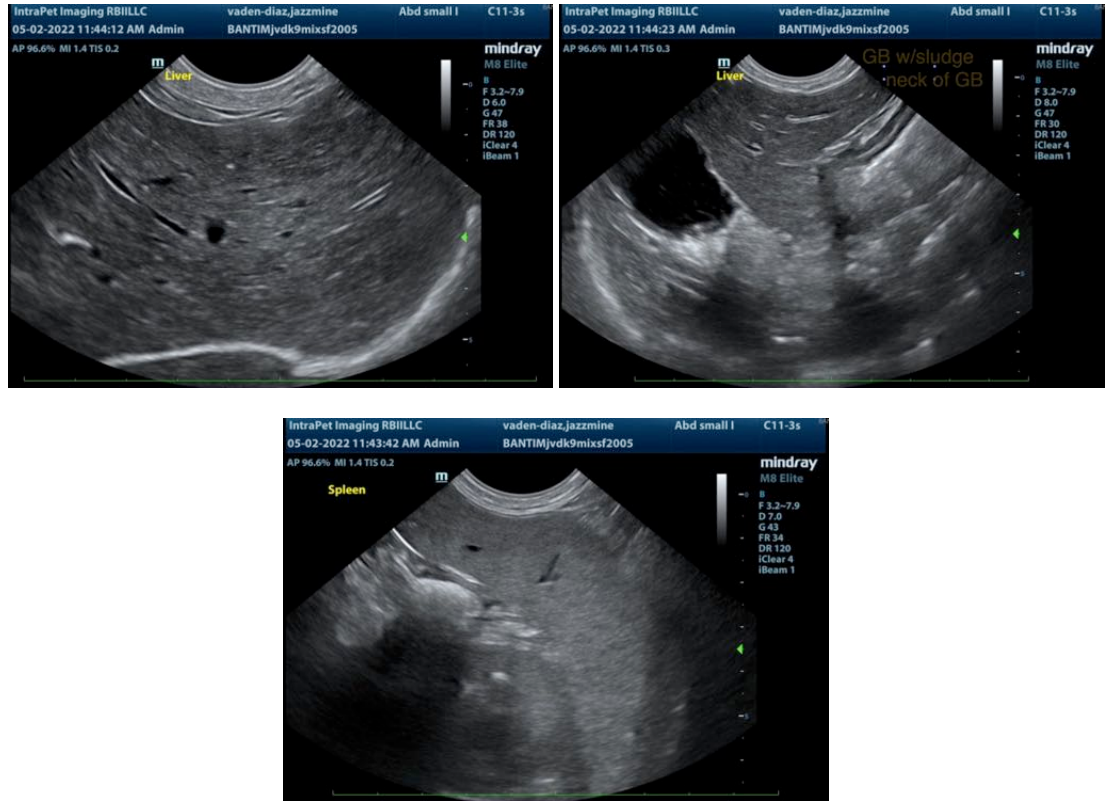
If hypertensive and/or proteinuric, a very low dose of telmisartan is suggested, with a slow up-titration of the dose over a week to decrease the risk of adverse effects.

Low fat diets tend to be high in protein, therefore, a mature diet that is restricted in phosphorus may be required (less than 1.7 gram/1000 kcal), or Purina HA vegetarian formulation may be considered as it is "renal friendly" and low in fat.

Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on the patient's history. Subcutaneous fluids is suggested a few days a week to maintain hydration. Increasing water consumption by mouth is also very helpful, for example, eating canned food, as well as adding water to the canned food or broth (low sodium) to stimulate consumption.







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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