IMAGING PERFORMED BY

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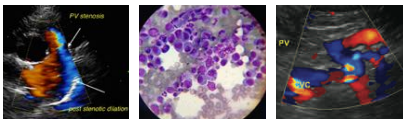

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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DATE
3/22/22

PATIENT
Rusty Herzog

SPECIES
Canine

BREED
Labradoodle

SEX
Neutered male

AGE
5/21/09

WEIGHT
61.6 lbs

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

HOSPITAL NAME
Aberdeen VC

REFERRING VET
Dr. Fritz

INVOICE
97088

PRESENTING CLINICAL SIGNS

History: Sample text. Sample text. Sample Text.
PU/PD, increased liver enzymes.
Current Medications: None.
Lab Results: Increased ALT, ALP, GGT, Chol. Protide in urine 2+, USG 1.009.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Declined, scan limited, sedation required for further imaging.
Stat Report: Declined / Not requested.
Imaging Performed By: Rachel Brilhart, RDMS.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

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

The left kidney is within normal limits in size for the patient's weight (6.76 cm). The capsule is smooth. The cortex is thicker and more "plump" than normal and mildly to moderately hyperechoic. A mild to moderate loss of the normal definition of the corticomedullary junction is observed. Mineralization of the diverticula and pelvis are present without evidence of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

The right kidney is within normal limits in size for the patient's weight (6.97 cm). The capsule is smooth. The cortex is thicker and more "plump" than normal and mildly to moderately hyperechoic. A mild to moderate loss of the normal definition of the corticomedullary junction is observed. Mineralization of the diverticula and pelvis are present without evidence of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

Adrenal Glands

The left adrenal gland measures 0.88 cm at the cranial pole, 0.80 cm at the caudal pole and 3.05 cm in length. The left adrenal gland is enlarged and plump. The phrenico-abdominal vein appears distended although a thrombus is not visualized.

The right adrenal gland measures at the high end of the normal reference range, but may be under estimated as there is a large amount of panting artifact. The cranial pole measures 0.75 cm, the caudal pole measure 0.76 cm and 2.4 cm in length.

Although no abnormalities are observed with their echogenicity or echotexture, both glands are slightly rounded or "plump", and the left adrenal is overtly enlarged. Adrenal hyperplasia secondary to hyperadrenocorticism (HAC) is suspected, however, adrenomegaly may also occur due to stress (chronic illness). An ACTH stimulation test or low dose dexamethasone suppression test is recommended.

Spleen

The spleen is severely heterogenous with a mottled appearance. Note, cavitary lesions are not observed. The splenic vein is wide and tortuous, measuring 0.9 cm in diameter. It is filled with echogenic, avascular "material", suggestive of a thrombus. The length of what is assumed to be a thrombus measures 4.9 cm, however, it could be longer, as the splenic vein cannot be followed further, and artifact due to panting affects proper evaluation. The mesentery surrounding the splenic vein and the spleen is markedly hyperechoic.

Liver

The liver also has a mottled, heterogenous appearance with multiple, hypoechoic nodules of variable size. A well-defined, hyperechoic nodule measuring 1.80 cm in diameter x 2.01 cm in length is observed, as is a smaller nodule adjacent to it. In addition, an ill-defined, hyperechoic area measuring 2.96 cm in length x 2.89 cm in diameter is noted. The hyperechoic nodule and ill-defined area are suggestive of fibrosis and/or an accumulation of fat or nodular hyperplasia. The hypoechoic nodules of variable size are most likely due to nodular regeneration, which are benign, age related changes. The walls of the portal veins are prominent (hyperechoic), which may occur secondary to inflammation. The mesentery surrounding the liver and individual lobes is also moderately to severely hyperechoic.

A moderate amount of echogenic material (sludge) is present in the gallbladder, some of which has accumulated at its neck and entrance of the cystic duct. The gallbladder wall is thickened at 2.0 mm and is mildly hyperechoic. There are no abnormalities observed with the cystic and common bile ducts i.e. there are no signs of an obstruction.

Gastrointestinal

The gastric wall and pylorus are normal in thickness. Food is present within the stomach lumen. There is no loss of definition of the normal architecture of the layering of the wall. No obvious abnormalities are observed with its peristalsis.

The small intestinal wall thickness, including the duodenum, are within normal limits and there is no evidence of dilation. The definition of the wall layers is preserved. 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.

Pancreas

The right pancreas is has very irregular and ill-defined margins. It is also markedly enlarged, almost edematous and very hypoechoic. There are hyperechoic infiltrates, possibly due to fibrosis, fat, amyloid deposition, as well as nodular hyperplasia dispersed throughout the parenchyma. Neoplasia cannot be excluded. Similar findings are noted with the left limb of the pancreas, although not as severe. The mesentery surrounding both limbs of the pancreas is hyperechoic.

Other

Lymph nodes: No abnormalities are observed.

Abdominal effusion is not visualized.

Heart

Evaluation of the heart was not possible due to panting artifact.

ULTRASONOGRAPHIC FINDINGS

- The renal changes may be due to glomerulonephritis associated with hyperadrenocorticism. However, pyelonephritis cannot be excluded despite the absence of sonographic signs. Age related changes are also contributing to the abnormalities observed.

- Adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism is strongly suspected. An ACTH stimulation test or low-dose dexamethasone suppression test is recommended.
- The diffuse hyperechogenicity of the liver is highly suggestive of a vacuolar hepatopathy, which is most likely due to hyperadrenocorticism, although stress (chronic illness) and cholestasis may also

be playing a role. Differential diagnoses, such as hepatitis, is considered less likely, however, cholangitis/cholangiohepatitis due to an ascending secondary bacterial infection cannot be excluded. The hypoechoic nodules are most likely due to nodular regeneration, which is a benign, age-related change. As mentioned previously, neoplasia cannot be excluded with certainty.

- Splenitis with edematous changes, possibly due to a thrombus within the splenic vein is suspected. Thromboembolic disease may occur secondary to hyperadrenocorticism, as well as proteinuria (unrelated to hyperadrenocorticism). Infiltrative disease, such as a round cell tumour remains a differential diagnosis.

- The pancreatic abnormalities are suggestive of acute pancreatitis. However, there are also changes suggestive of nodular hyperplasia, fibrosis, amyloid and fat deposition. Neoplasia cannot be excluded.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- A urinary tract infection should be excluded, if not already performed.

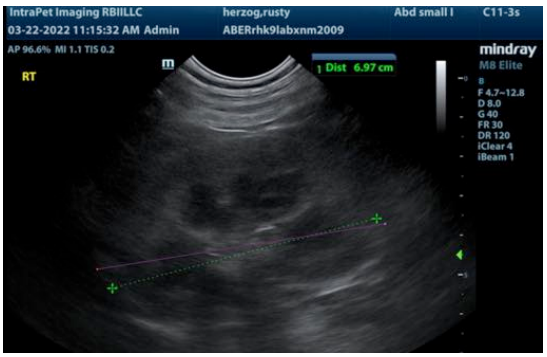
- Further diagnostics for hyperadrenocorticism are recommended, i.e. an ACTH stimulation test or low-dose dexamethasone suppression

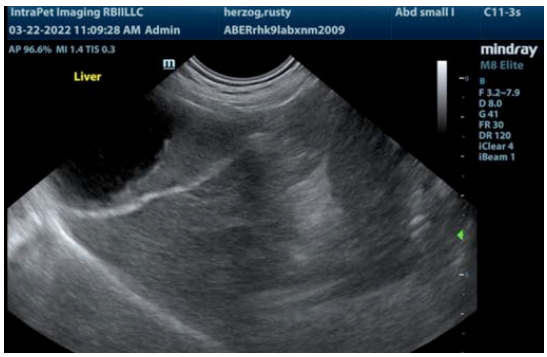
- A Spec cPL is also suggested to rule out pancreatitis. However, it may be elevated if pancreatic inflammation secondary to neoplasia is present, therefore, a FNA would be ideal.

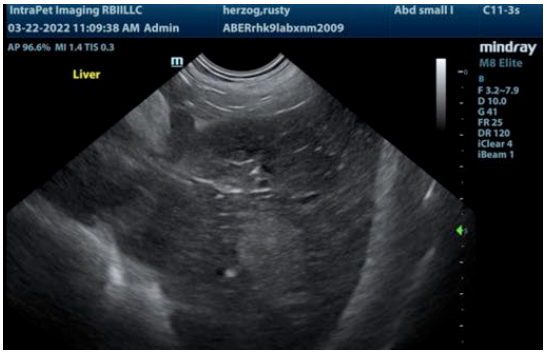
- If a FNA of the pancreas is performed, aspirates of the spleen and liver should also be pursued. A coagulation profile is strongly recommended prior to doing so.

- A blood pressure is recommended, ideally with the client present.

- An internal medicine consult is suggested to discuss treatment/prevention of further thromboembolic events pending further diagnostic tests.



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Liver
mindray
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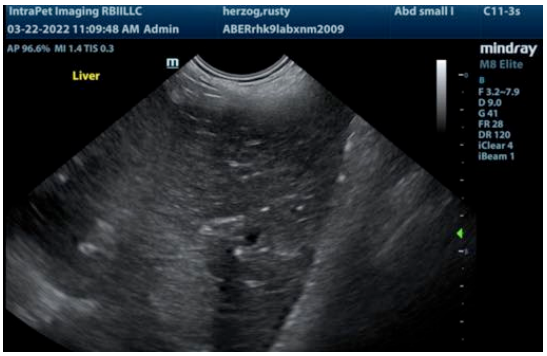
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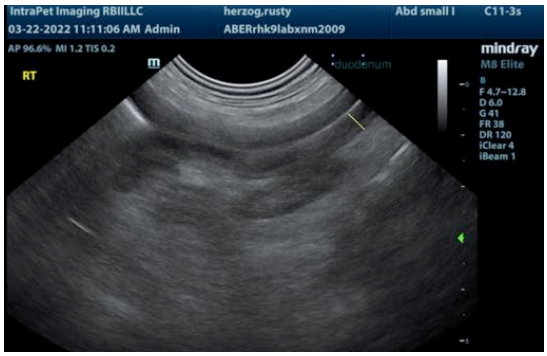
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RT
duodenum
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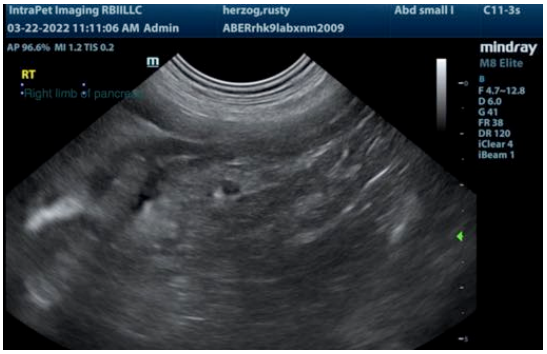
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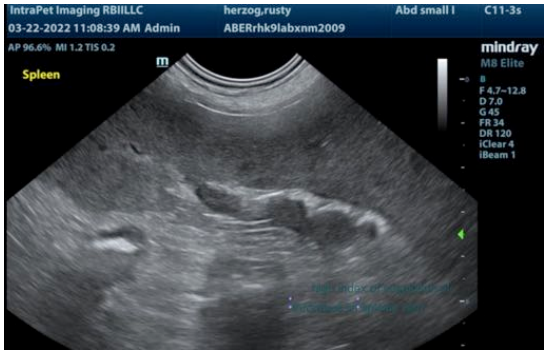
RT
Right limb of pancreas
mindray
M8 Elite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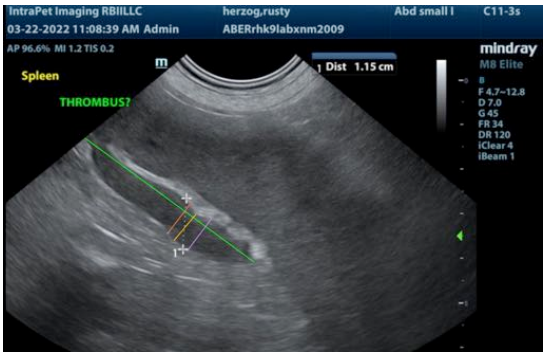
Spleen
mindray
M8 Elite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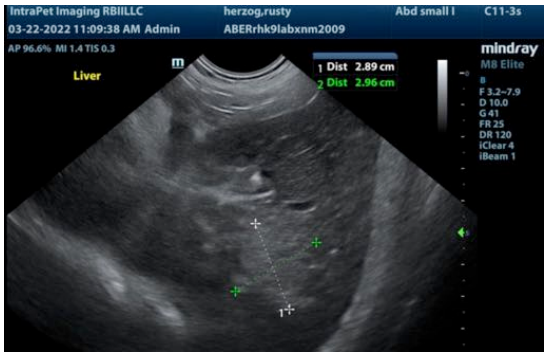
Spleen
THROMBUS?
1 Dist 1.15 cm
mindray
M8 Elite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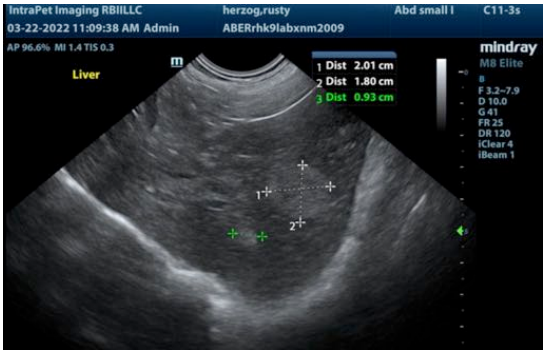
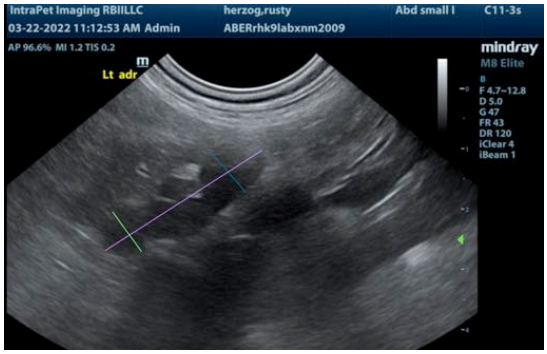
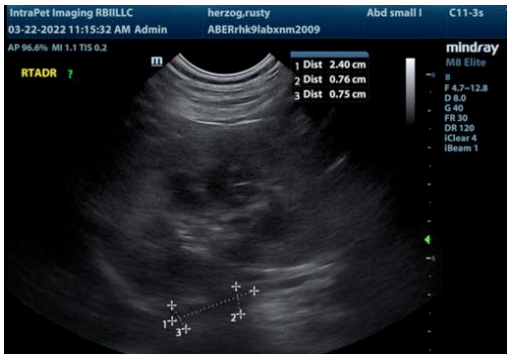
AP 96.6% MI 1.4 TIS 0.3
Liver
1 Dist 2.89 cm
2 Dist 2.96 cm
mindray
M8 Elite







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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM
Lisa.Carioto@sonopath.com