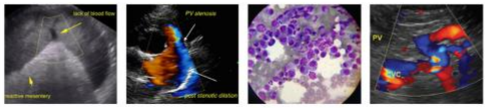


PATIENT

Sophie Capron

SPECIES

Canine

BREED

Yorkshire Terrier Mix

SEX

Spayed Female

AGE

7 Years

WEIGHT

35 Pounds

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Pamela Harrigan, RDCS

HOSPITAL NAME

Wood River AH

REFERRING VET

Dr. Leah Fischer, DVM

INVOICE

15804

DATE

5/27/22

PRESENTING CLINICAL SIGNS

History: Diabetes mellitus with increasing insulin resistance. Had been well controlled on NovR 5 and NovN 12. Tested for Cushing's on multiple occasions, but never conclusive. NOw up to NovR 17 and NovN 20 with 2+ protein. Normal thyroid. New grade II/VI systolic murmur; asymptomatic for heart disease. ALP 281; alb 2.6; BUN 35; phos 6.9; K 6.0; Na:K 24 but Plt 624K. Having bi-cavity ultrasound exams. Sedated with butorphanol

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is well 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 cystoliths, polyps or a mass. A trivial amount of free floating sediment is observed.

Kidneys

Both kidneys are at the high end of the normal reference range for a dog of 15.9 kg.

The **left** kidney measures 6.05 cm. The capsule is irregular (circumferentially). The cortex is mildly to moderately hyperechoic (i.e. it is isoechoic to the spleen) and a moderate loss of the normal definition of the cortico-medullary junction is present. There is no evidence of nephroliths. Mild pyelectasia is present: longitudinal = 2.48 mm; transverse = 2.70 mm, with acoustic enhancement of the surrounding parenchyma. A round, anechoic structure, measuring 0.49 cm in diameter x 0.63 cm in length is noted. It is most consistent with a benign cyst. Two other smaller benign cysts are also noted (not measured). The mesentery surrounding the kidney is not hyperechoic.

The **right** kidney measures 6.30 cm. The capsule is smooth. The cortex is moderately hyperechoic. A moderate loss of the normal definition of the cortico-medullary junction is present. There is no evidence of nephroliths. Mild pyelectasia is present: longitudinal = 2.07 mm; transverse = 2.70 mm.A round, anechoic structure, measuring 0.29 cm in diameter x 0.36 cm in length is noted. It is most consistent with a benign cyst. A few other smaller benign cysts are also noted (not measured). The mesentery surrounding the kidney is not hyperechoic.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

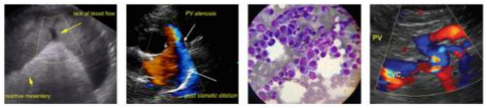
The **left** adrenal gland measures 0.86 cm at the cranial pole, 0.52 cm at the caudal pole. No abnormalities are noted with the gland's overall echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 0.45 cm at the cranial pole, 0.70 cm at the caudal pole. No abnormalities are noted with the gland's overall echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

Splenomegaly, however, it is within normal limits in architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver



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Mild hepatomegaly is suspected, however, this is better characterized at the time of the ultrasound or with radiographs. The liver's borders are smooth and vary between sharp to very mildly rounded. It is diffusely hyperechoic, and a diffuse, very mildly coarse or granular echotexture is observed. A few hyperechoic nodule, 0.61 cm in diameter x 1.04 cm in length, is suggestive of fibrosis, fat, and/or mineralization. No abnormalities are observed with the hepatic vessels.

The gallbladder (GB) is moderately to markedly distended with a moderate amount of free floating and gravity dependent echogenic material. The GB wall is within normal limits in thickness and echogenicity. 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. The parenchyma surrounding the GB is hyperechoic.

Gastrointestinal

The stomach is filled with a large amount of ingesta (not fasted). The gastric wall is within normal limits in thickness and the wall layers are well defined. The submucosa is mildly prominent. No obvious abnormalities are observed with its peristalsis.

No abnormalities are observed with the duodenal papilla.

The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. No abnormalities are noted with the ileo-cecal-colic junction. 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

It consists of homogeneous parenchyma with pinpoint hyperechoic foci scattered haphazardly throughout the parenchyma. These changes are suggestive of fibrosis, which may be due to age-related changes, secondary to previous episodes of pancreatitis, mineralization, as well as amyloid deposition. Although the pancreas is not overtly hypoechoic, the surrounding mesentery is moderately hyperechoic and, i.e., active pancreatitis is suspected. Occasional hypoechoic nodules (e.g., 2.9 mm in diameter x 2.11 mm in length) are observed dispersed throughout the hyperechoic mesentery, which may be due to nodular or lymphoid hyperplasia. Neoplasia is considered much les likely.

Other

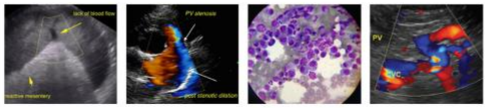
Lymph nodes

No abnormalities are observed

Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- **Adrenal glands**: *Bilateral adrenomegaly*; cranial pole of the **left** gland and caudal pole of the **right**. Pituitary dependent hyperadrenocorticism is suspected, however, adrenal hyperplasia secondary to chronic illness (stress), cannot be excluded. Bilateral non-functional adenomas are also possible. There are no signs of neoplasia and the surrounding vasculature is unremarkable.



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- **Liver:** A vacuolar hepatopathy due to diabetes mellitus. Other underlying causes include the stress of pancreatitis and underlying HAC. Cholestasis is also likely. Cholangitis/cholangiohepatitis and cholecystitis with a secondary bacterial infection cannot be excluded. There are no obvious signs of neoplasia.

- **Gallbladder:** *Gallbladder sludge* without signs of a mucocele. Dogs with diabetes mellitus and hyperadrenocorticism are more predisposed to developing gallbladder sludge. 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. *Cholecystitis with a secondary bacterial infection* cannot be excluded.

- **Kidneys**: Pyelonephritis is suspected based on the findings, particularly the bilateral pyelectasia, however, age-related degeneration are likely contributing to the abnormalities observed, and glomerulonephritis cannot be excluded.

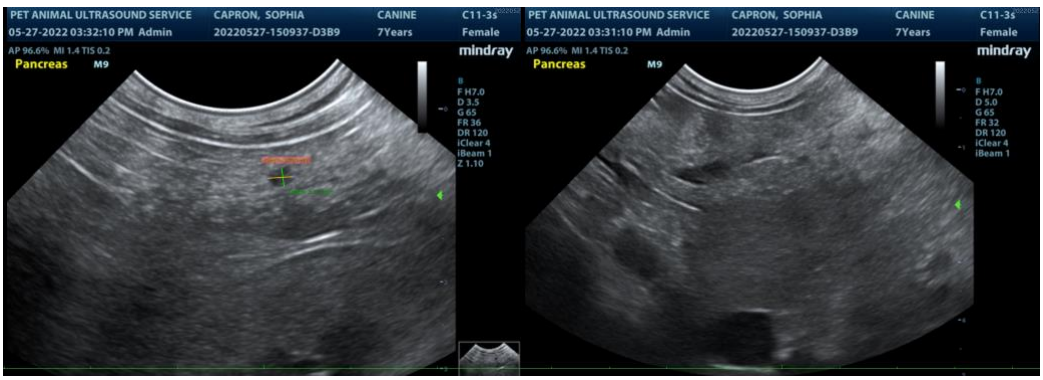
- **Pancreas**: Active pancreatitis is suspected. Nodular and lymphoid hyperplasia may be present amongst the hyperechoic mesentery. There are no obvious signs of neoplasia.

- **Spleen**: Splenomegaly of unknown etiology. Neoplasia is considered unlikely. Differential diagnoses include splenitis, extramedullary hematopoiesis, hypersplenism and reactive hyperplasia.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The following are suggested/recommended

- Obtaining a history regarding signs of *GERD* from the client. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on the patient's history.
- A spec cPL to exclude pancreatitis
- Fasting triglycerides
- A urine culture and sensitivity
- If negative, a urine protein: creatinine ratio is suggested.
- An arterial blood pressure is recommended to rule out hypertension
- Other diagnostics to rule out underlying causes of glomerulonephritis may be considered depending on results of LDDS or ACTH stimulation test.
- Analgesia to treat pancreatitis
- Decreased dietary fat



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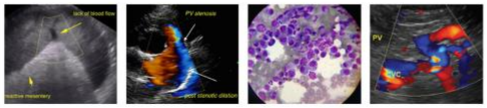

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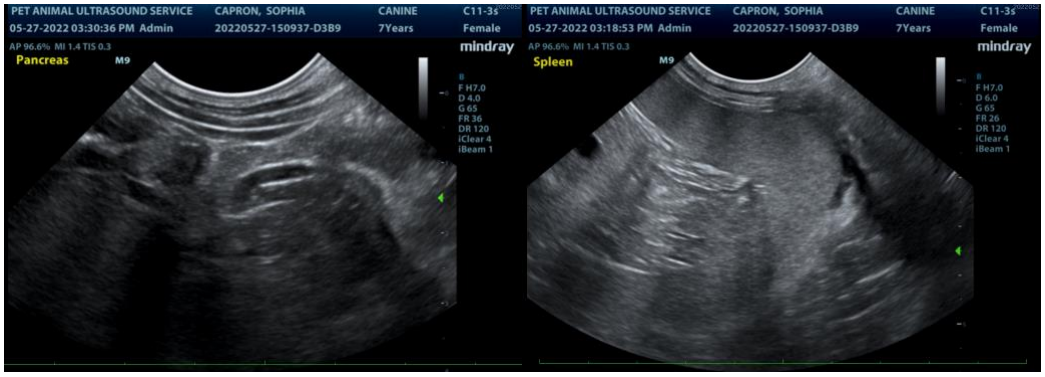

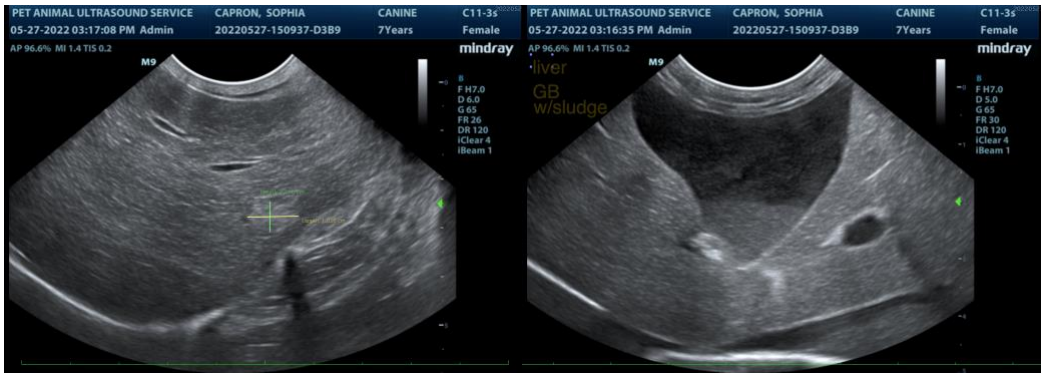

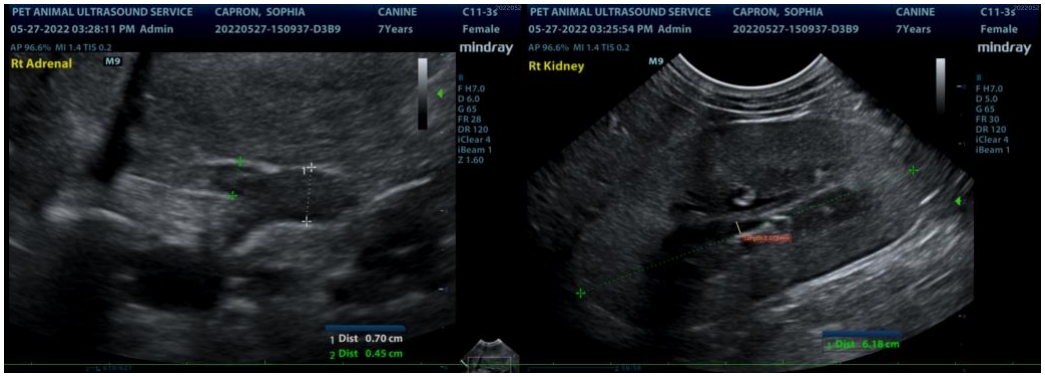

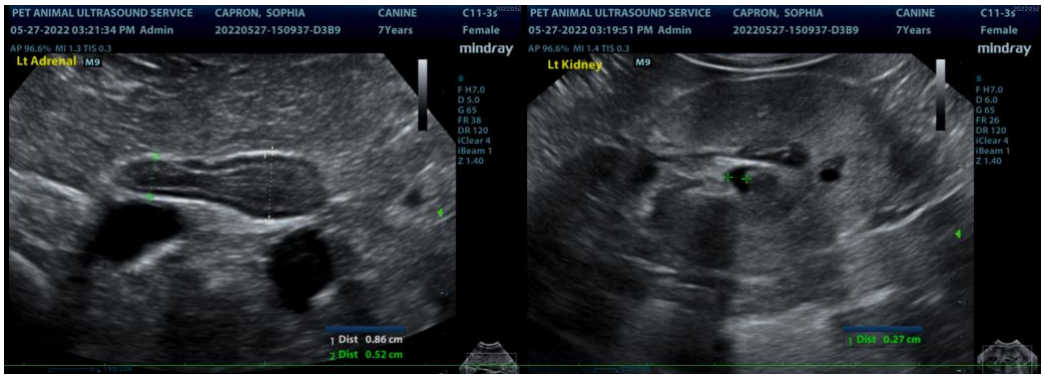

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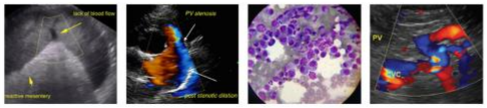

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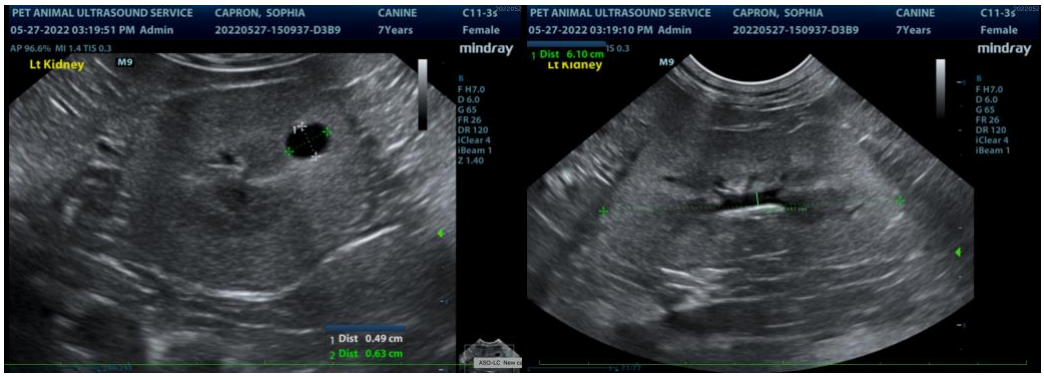

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

Lisa.Carioto@sonopath.com