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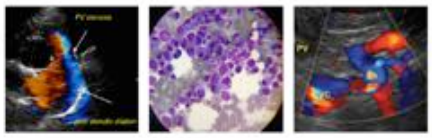

SonoPath
Clinical Sonography & Telecytology
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**PATIENT**

Sammy Wrona

**SPECIES**

Canine

**BREED**

Welsh Terrier

**SEX**

Neutered Male

**AGE**

13 years

**WEIGHT**

20 Pounds

**INTERPRETED BY**

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

**IMAGING PERFORMED BY**

Tom McNeil

**HOSPITAL NAME**

SVS Imaging CT

**REFERRING VET**

Preiser AH Dr. Preiser

**INVOICE**

98137

**DATE**

4/8/22

## PRESENTING CLINICAL SIGNS

History: Anorexia and diarrhea for about one week. Treated for pancreatitis with Cerenia injection and metronidazole. Minimal response.
Abnormal PE/Chem/CBC/UA Results: Elevated SDMA (18), elevated BUN (46), Crea WNL (1.7), mildly elevated lipase (1808), abnormal snap cPL.

## 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 cystoliths, polyps or a mass. A trivial to small amount of free floating sediment is present, most likely composed of mucus, crystalline material and exfoliated cells. The mild amount of debris is likely clinically insignificant given the lack of inflammatory changes to bladder wall.

The prostate is homogenous and measures 0.82 mm, which is within normal limits for a neutered male.

The left kidney measures 4.47 cm (within normal limits). The capsule is smooth. However, the cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations within the cortex and accumulation of fat in the pelvis are observed, in addition to mineralizations of the diverticulae. There is no evidence of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

The right kidney measures 4.77 cm (within normal limits). The capsule is smooth. Findings are similar to the left kidney.

### *Adrenal Glands*

The left adrenal gland measures 0.65 cm at the cranial pole, 0.60 cm at the caudal pole and 2.20 cm in length. No abnormalities are noted with the gland's shape, overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The right adrenal gland measures 0.55 cm at the cranial pole, 0.61 cm at the caudal pole and 1.80 cm in length. No abnormalities are noted with the gland's shape, overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

### *Spleen*

The spleen is within normal limits in size, 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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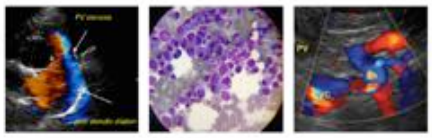

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There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver is very mildly heterogeneous with the presence of occasional, hypoechoic nodules of variable size. These are appear most consistent with nodular regeneration, which is a benign, age-related change often observed in senior patients. Two hyperechoic nodules are also observed; 0.75 cm and 0.5 cm in diameter, respectively. The latter may be due to fat, mineralization, nodular regeneration. No abnormalities are observed with the hepatic vessels.

A moderate amount of echogenic material/debris (sludge) is present within the lumen. The sludge varies in echogenicity. The sludge casts an acoustic shadow, therefore, early formation of choleliths is possible. Cholestasis and cholecystitis cannot be excluded.

### *Gastrointestinal*

A large amount of gas is present in the stomach. The gastric wall and pylorus are within normal limits in thickness. There is no loss of definition of the normal architecture of the wall layers. No obvious abnormalities are observed with its peristalsis.

The small intestinal wall thickness is within normal limits and the definition of the wall layers is preserved. Mucosal stippling is present and ingesta is present throughout the small intestines. A loop of bowel in the region of the left limb of the pancreas is filled with ingesta and quite a bit of liquid. Peristalsis of this segment of bowel appears ineffective, with a “to and fro” motion, rather than the normal peristalsis. An obvious obstruction is not evident.

Gas is present in the transverse colon. Formed stools are present in the colon. 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 limb of the pancreas is mildly hypoechoic. The surrounding mesenteric fat is mildly to moderately hyperechoic, suggestive of saponification. These findings are suggestive of pancreatitis. There are no overt signs of neoplasia.

The left limb of the pancreas is diffusely hypoechoic. The surrounding mesentery is hyperechoic. These changes are suggestive of pancreatitis. There are no overt signs of neoplasia.

**Other**:

The medial iliac lymph node measures 0.49 cm. It is within normal limits in size, echotexture, and echogenicity, however, it is more rounded (“plump”) than usual. The surrounding mesentery is mildly hyperechoic.

These findings are most likely due to reactive hyperplasia.

The left medial iliac lymph node measures 0.3 cm and is within normal limits.

Abdominal effusion is not visualized.

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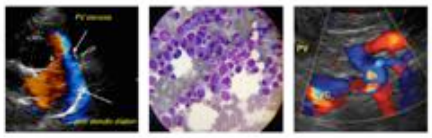

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## ULTRASONOGRAPHIC FINDINGS

- Both adrenal glands are at the high end of normal reference range to very mildly enlarged for a dog of Sammy's stature. Although no abnormalities are observed with their echogenicity or echotexture, they are both slightly rounded or "plump". Adrenal hyperplasia secondary to stress (chronic illness) and hyperadrenocorticism (HAC) are differential diagnoses. This is likely an incidental finding and not related to Sammy's current clinical signs. Further diagnostic tests for hyperadrenocorticism are *not* recommended for the moment.
- Very mild degenerative changes of both kidneys, which are suggestive of age related degeneration. However, a component of the renal changes may be due to glomerulonephritis (GN). Pyelonephritis cannot be excluded despite the absence of sonographic signs. Hyperadrenocorticism can cause GN.
- The diffuse hyperechogenicity of the liver is highly suggestive of a vacuolar hepatopathy, which may occur due to stress (chronic illness) or hyperadrenocorticism. Differential diagnoses, such as hepatitis is considered less likely, however, cholestasis cannot be excluded. The hypoechoic nodules observed are most likely due to nodular regeneration, which is a benign, age-related change. The hyperechoic nodules may be due to fat, mineralization, or nodular regeneration. There are no obvious signs of neoplasia.
- The significance of the gallbladder sludge is unknown. However, early cholelithiasis cannot be excluded and evaluation of Sammy's triglycerides and cholesterol are recommended following a 12 hour fast. An evaluation of Sammy's history is suggested to ensure that he is not suffering from signs of gastroesophageal reflux disease. Treatment with ursodeoxycholic acid may be recommended depending on Sammy's history. It should be noted that dogs with hyperadrenocorticism tend to develop gall bladder sludge.
- Although Sammy has multiple changes on his abdominal ultrasound that are suggestive of hyperadrenocorticism, it is not recommended to perform diagnostic tests at the moment as false positives may occur.
- Pancreatitis is suspected.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Discontinue the metronidazole as it may be contributing to nausea and decreased appetite and dysbiosis.

The renal changes may be in part due to age related degeneration, however glomerulonephritis (GN) cannot be excluded. Causes of GN include leptospirosis, tick borne diseases and heartworm disease, and the appropriate tests are suggested to exclude an underlying cause. Glomerulonephritis could cause Sammy's current clinical signs.

A low fat hydrolyzed or hypoallergenic diet is suggested, for example, Purina HA.

Arterial blood pressure should be evaluated (GN).

Analgesia for visceral pain, such as buprenorphine, is suggested, as well as supportive care, +/- subcutaneous fluids. A low fat, easily digestible diet that is low in fibre is recommended to help decrease gas and bloating.

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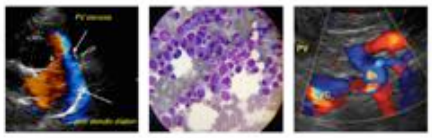

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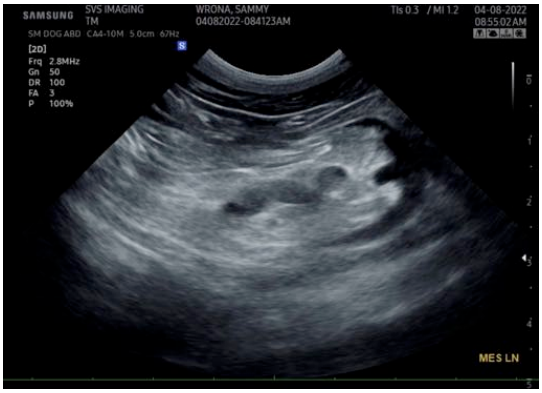
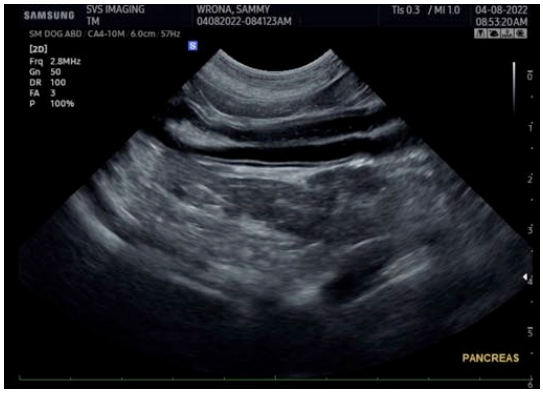
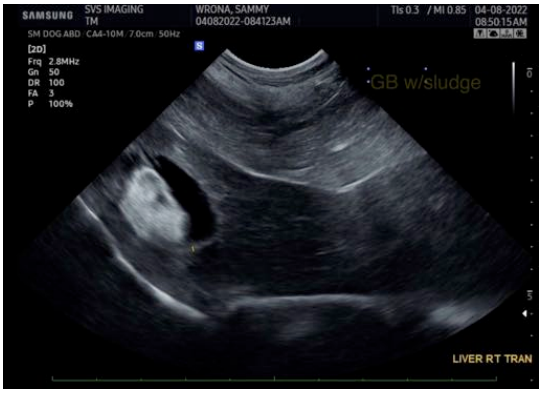
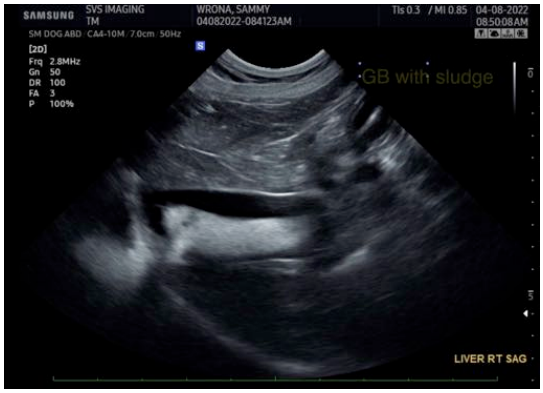
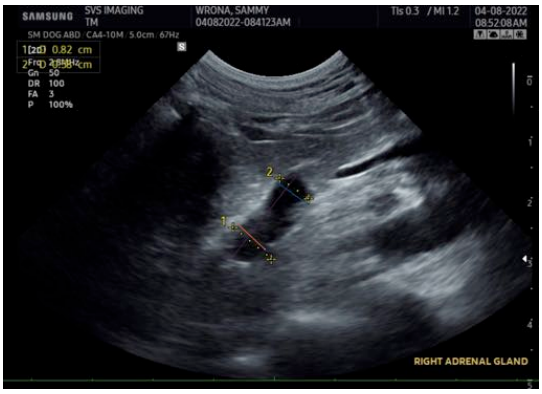
Once Sammy has recovered from this episode in about 4-6 weeks a UPC may be performed to exclude proteinuria.

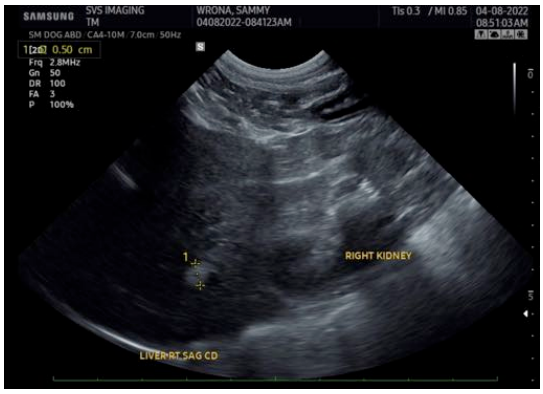


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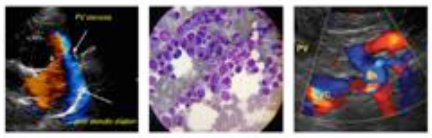

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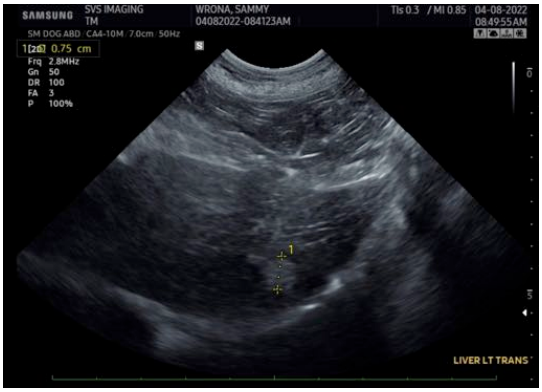


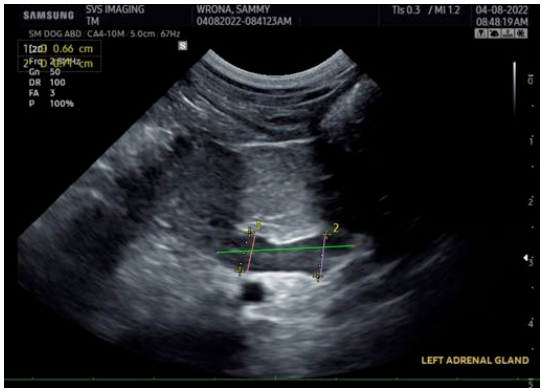


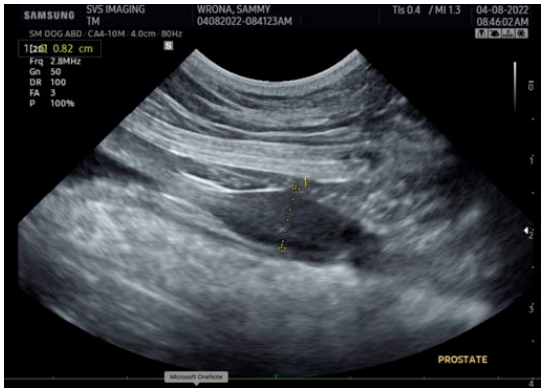


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**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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