

**PATIENT**

Winston Pazolka

SPECIES

Canine

BREED

Hound Mix

SEX

Neutered Male

AGE

6 ½ years

WEIGHT

62 lbs

INTERPRETED BYLisa Carioto, DVM,
DVSc, Diplomate
ACVIM**IMAGING
PERFORMED BY**

Amy Mayhew LVT

HOSPITAL NAME

SVS Imaging Michigan

REFERRING VET

Family Pet Practice

INVOICE

30020

DATE

4/29/22

PRESENTING CLINICAL SIGNS

Lame in rear (pelvic/tail pain) off/on for past year. Abnormal CBCs noted since Feb 2022 (leukopenia). April 2022 improved WBCs but still not normal. Meloxicam and Gabapentin have been used for treatment. No fevers have been noted. No GI signs. No weight loss. Presented today for a recheck of CBC and lameness. Patient is doing better with pain/lameness, but CBC shows new anemia and low white cells. Still not clinical per owner.

Abnormal PE/Chem/CBC/UA Results: See attached BW from today. UA WNL. Chest rads WNL

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 sediment, cystoliths, polyps or a mass.

Prostate

The prostate is homogenous and measures 1.01 cm, which is within normal limits for a neutered male.

Kidneys

The **left** kidney measures 6.09 cm. The capsule is smooth. A thick hyperechoic band is observed along the medulla, traversing parallel to the corticomedullary junction, which accentuates the definition of the cortico-medullary junction. There are no signs of nephroliths or pyelectasia. An accumulation of intrapelvic fat is noted. The surrounding mesentery is mildly hyperechoic.

The **right** kidney measures 7.18 cm. The capsule is smooth. The cortex is hyperechoic, i.e. it is isoechoic to the liver, which is also hyperechoic compared to normal. A thick hyperechoic band is observed along the medulla, traversing parallel to the corticomedullary junction. An avascular, anechoic to hypoechoic structure, with a smooth, thin wall, measuring 2.80 cm in height x 2.21 cm in length, is visualized within the medulla. It is most consistent with a benign cyst. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is mildly hyperechoic.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.40 cm at the cranial pole, 0.31 cm at the caudal pole and 2.02 cm in length. Although abnormalities are not appreciated with the gland's overall architecture, echogenicity or echotexture, the caudal pole is considered thinner than normal for a dog of Winston's stature. The phrenico-abdominal vein and surrounding vasculature are unremarkable. The surrounding mesentery is mildly hyperechoic.

The **right** adrenal gland measures 0.42 cm at the cranial pole, 0.60 cm at the caudal pole and 2.25 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

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Spleen

Subjectively, the spleen appears mildly enlarged, 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

Hepatomegaly is suspected, however, size is better characterized at the time of the ultrasound or with radiographs. Its borders are smooth and sharp. The liver's echotexture is homogeneous, however, it is diffusely hyperechoic, i.e., it is isoechoic to the spleen. Focal lesions are not observed. No abnormalities are observed with the hepatic vessels visualized.

The gall bladder (GB) is moderately distended with echogenic material (sludge) within the lumen. The sludge is of mixed echogenicities, free floating and somewhat inspissated. There is no evidence of cholelithiasis. Thick strings of mucus are noted arising from the luminal wall and attaching to the inspissated debris, i.e. a mucocele in early formation cannot be excluded. There is no evidence of edema surrounding the GB. The gallbladder wall is within normal limits in size, thickness and echogenicity. The cystic and common bile ducts are not observed, however, there are no signs of an obstruction.

Gastrointestinal

Food, gas and fluid are present within the lumen of the stomach. The gastric wall is within normal limits in thickness. Although the wall layers are well defined, subjectively, the mucosa, submucosa and muscularis are mildly prominent. Furthermore, fogging of the muscularis is present. Obvious gastric erosions or ulcers are not visualized. No obvious abnormalities are observed with its peristalsis.

A large amount of ingesta and fluid are present within the duodenum. The duodenum is within normal limits in thickness and definition of the wall layers is preserved. Decreased and ineffective peristalsis is observed, i.e., a "to and fro" motion is noted.

The small intestines are within normal limits in wall thickness. No abnormalities are observed with wall definition. Ingesta and fluid are present within the small intestines, however, 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, or an obstruction in the gastrointestinal tract.

Pancreas

No overt abnormalities are observed with the echogenicity or echotexture of the parenchyma of the left limb.

The right limb of the pancreas is prominent and slightly hypoechoic. The surrounding mesentery is not overtly hyperechoic, i.e., signs of neoplasia are not appreciated.

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Other

Lymph nodes

No abnormalities are observed

Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- Splenomegaly with preservation of the normal architecture. Extramedullary hematopoiesis is suspected based on the presence of anemia. However, other differential diagnoses include antigenic stimulation and secondary inflammation, such as splenitis, due to an infectious cause, cannot be excluded. An immune mediated cause of splenitis must also be considered. Hypersplenism and reactive hyperplasia are also possible. Neoplasia, such as lymphoma, mast cell tumour, histiocytic sarcoma, or other round cell tumour, is considered much less likely. A fine needle aspirate is required to achieve a definitive diagnosis.
- The hepatomegaly and diffuse hyperechogenicity may be due to a vacuolar hepatopathy, which may occur due to stress, secondary to a chronic illness. Hyperadrenocorticism is unlikely. Differential diagnoses, such as hepatitis, cholestasis, cholangitis/cholangiohepatitis with a secondary bacterial infection cannot be excluded, particularly with the administration of non-steroidal anti-inflammatories.
- A mucocele in its early development cannot be excluded. The presence of sludge in the gallbladder may be 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.
- There are no obvious signs of gastrointestinal erosions or ulcers, however, their absence does not rule out the possibility of GI hemorrhage and anemia. Multiple layers of the stomach appear prominent and a mild ileus of the duodenum is present. These findings may be due to underlying inflammation, caused by irritation secondary to the administration of non-steroidal anti-inflammatories. Underlying inflammatory bowel disease cannot be excluded.
- The renal changes may be due to glomerulonephritis, however, pyelonephritis cannot be excluded despite the absence of sonographic signs.
- An avascular, anechoic to hypoechoic structure, most consistent with a cyst is noted within the medulla. A small amount of echogenic material is present within the structure; i.e. a sterile abscess or abscess cannot be excluded.
- The left adrenal gland is slightly thinner than normal at the caudal pole.
- Although overt signs of pancreatitis are not appreciated, a low grade smoldering pancreatitis cannot be excluded.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

**PATIENT**

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A urinalysis and urine culture and sensitivity are suggested to exclude possible pyelonephritis or a cyst that has developed into an abscess.

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A urine protein: creatinine (UPC) ratio is recommended if the urine culture is negative. Note, a UPC ratio should be performed if the urine specific gravity is less than 1.015, even if the dipstick is negative for protein.

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A fundic exam and an arterial blood pressure are recommended to rule out hypertension, ideally, in the presence of the client, to decrease Winston's stress.

SEX

Neutered Male

Further diagnostic tests to rule out causes of glomerulonephritis are recommended, including a leptospirosis, tick borne diseases and heartworm disease (SNAP 4Dx).

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Radiographs of the pelvis are suggested, if not already performed.

Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor may be required depending on the Winston's history. Note, hypertriglyceridemia predisposes certain individuals to the development of mucocoeles. Treatment with ursodeoxycholic acid is suggested, however, identifying the cause of the anemia is suggested prior to initiating the ursodeoxycholic. A slow uptitration of the dose is suggested to avoid side effects.

WEIGHT

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A low fat diet is often required in dogs who suffer from hypertriglyceridemia.

A fT4 (EQD) and TSH are suggested, as dogs with hypothyroidism may present with lameness due to polyarthritis, and are also predisposed to the development of mucocoeles.

INTERPRETED BYLisa Carioto, DVM,
DVSc, Diplomate
ACVIM

Hypoadrenocorticism may present in many different ways; i.e., certain abnormalities are present in Winston's history, on his laboratory results and today's ultrasound findings to suggest it as a possible cause. For example, the left adrenal gland is mildly thinner than normal, his CBC shows a leukopenia and anemia, and some dogs may present with an intermittent lameness or vague signs of generalized pain.

As a final note, cholangitis/cholangiohepatitis and cholecystitis cannot be excluded due to the severity of the gall bladder sludge, and secondary ascending bacterial infections may occur. Although indiscriminate use of antibiotics is not normally recommended, one could begin treatment with a broad-spectrum antibiotic and reassess liver enzyme activities, including a GGT, four to six weeks later, in addition to the CBC.

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SVS Mobile Imaging MI 734-637-7711
svsimagingmi@gmail.com



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Neutered Male

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6 1/2 years

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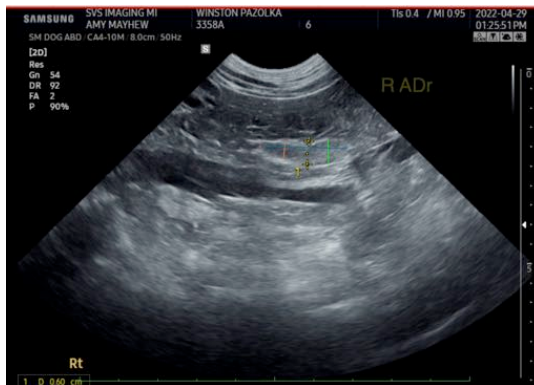
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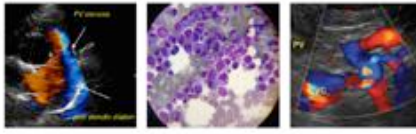
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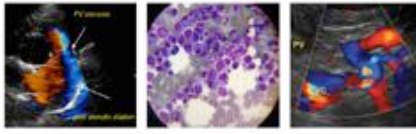
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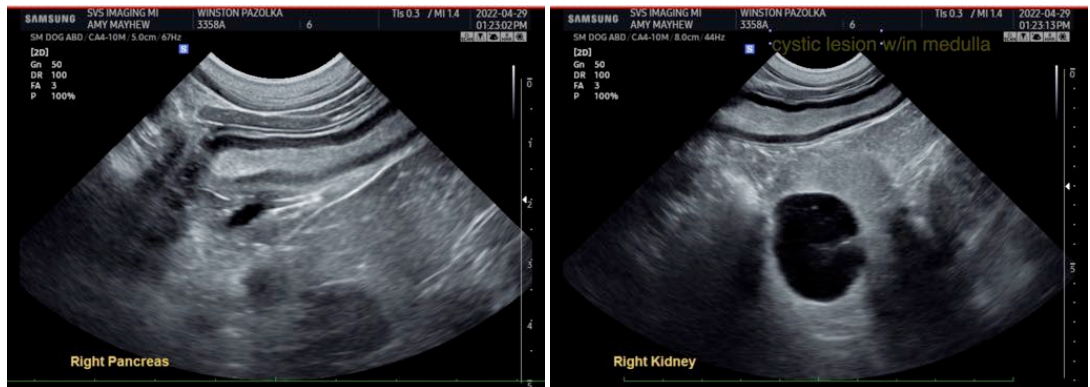
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

IMAGING PERFORMED BY

Amy Mayhew LVT

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

Lisa.Carioto@sonopath.com

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