

**PATIENT**

Waylon Anderson

**SPECIES**

Canine

**BREED**

German Shepherd

**SEX**

Neutered Male

**AGE**

5 years

**WEIGHT**

80 Pounds

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

Amy Mayhew LVT

**HOSPITAL NAME**

SVS Imaging Michigan

**REFERRING VET**

Union Lake VH

**INVOICE**

31156

**DATE**

6/8/22

**PRESENTING CLINICAL SIGNS**

History: Straining to defecate and urinate for the past 4 days.

Abnormal PE/Chem/CBC/UA Results: Rectal mass found 6 cm in on rectal exam on right side of wall-attached, no blood with rectal, non-painful with palpation.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****Urinary System**

The **urinary bladder** is not fully distended, but its contents are primarily anechoic. The wall is smooth, but mildly irregular in certain regions, for example, the trigone and apex. A trivial amount of free floating echogenic debris is observed. Evidence of cystoliths, polyps, or a mass is not observed. No major abnormalities are noted with the trigone. See proximal urethra under prostate, below.

No abnormalities are noted with the trigone or, and there is no evidence of sediment, cystoliths, polyps or a mass.

**Prostate**

The prostate is markedly enlarged, measuring up to 3.83 cm x 3.88 cm, and severely heterogeneous for a neutered male. It is avascular when evaluated with colour Doppler.

Anechoic structures are observed (0.8 cm x 1.0 cm), likely consistent with cysts, in addition to hypo and hyperechoic areas scattered haphazardly throughout.

The urethra proximal to the prostate is not dilated, however, the mucosa is hyperechoic and thicker than usual (1.15 mm), suggestive of urethritis. The wall of the urethra measures 2.32 mm, including the mucosa. The surrounding muscle appears inflamed.

**Kidneys**

The **left** kidney measures 7.72 cm. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

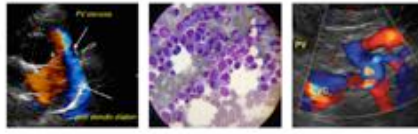
The **right** kidney measures 7.70 cm. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

**Aortic bifurcation/trifurcation**

No abnormalities observed with the blood vessels, however, the iliac lymph nodes are enlarged and hypoechoic.

**Adrenal Glands**

The **left** adrenal gland measures 0.51 cm at the cranial pole, 0.51 cm at the caudal pole. 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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The **right** adrenal gland measures (approximately) 0.49 cm at the cranial pole, 0.69 cm. 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**

The spleen is within normal limits in size, architecture and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified. Subjectively, it has a very subtle, diffuse, miliary echotexture.

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**Liver**

There are no obvious signs of hepatomegaly and its borders are smooth, but mildly rounded. It is diffusely hyperechoic, i.e., but remains hypoechoic to the spleen. A mildly to moderately coarse or granular echotexture is observed throughout the liver. Focal lesions are not observed. The walls of the portal veins are more prominent than usual. No obvious abnormalities are noted with the hepatic veins.

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The gallbladder (GB) is moderately distended with a small amount of free floating, gravity-dependent and inspissated echogenic material (sludge). The GB wall is within normal limits in thickness and echogenicity. A circumferential anechoic "halo effect" surrounding the GB is observed. This is suggestive of inflammation, edema and/or free fluid. 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, however, the parenchyma surrounding the GB is hyperechoic.

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A large amount of gas is present within 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.

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The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. No abnormalities are observed with the cecum or ileo-cecal-colic junction. Abnormally dilated loops of bowel are not observed.

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The wall of the descending colonic is thickened focally, measuring up to 0.33 cm. Mural detail is well preserved in many areas, however, it is decreased in some regions due to fogging of the mucosa and muscularis, and thickening of the muscularis.

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**Pancreas**

The pancreas has a mildly coarse echotexture, which is considered secondary to age related changes, however, previous episodes of pancreatitis cannot be excluded. There are no signs of active pancreatitis or neoplasia.

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**Other****Lymph nodes (LNs)***Left iliac:* Enlarged and hypoechoic, 0.99 cm in diameter x 3.04 cm in length*Right iliac:* Enlarged, "more plump", and hypoechoic, 1.14 cm in diameter x 3.22 cm in length

Some of the enlarged LNs visualized are possibly sublumbar.

The **mesentery** surrounding the LNs is mildly to moderately hyperechoic.**Abdominal effusion** is not visualized.**ULTRASONOGRAPHIC FINDINGS**

- **Prostate:** High index of suspicion of a prostatic adenocarcinoma or carcinoma as neoplasia is more common in neutered males compared to prostatitis.
- **Urinary bladder:** A urinary tract infection may be present based on the mildly irregular mucosa. However, one cannot rule out early neoplastic infiltration.
- **Lymphadenomegaly:** Although reactive hyperplasia remains a differential diagnosis, metastases to the lymph nodes must be considered due to aggressive nature of prostatic (adeno)carcinomas.
- **Colon:** The thickening and mild loss of mural detail is most likely due to irritation and inflammation secondary to tenesmus. Although neoplasia is possible, it is not as likely as a secondary inflammatory process. Biopsies would be required to exclude neoplasia definitively.
- **Liver and Gallbladder:** Vacuolar and reactive hepatopathies are suspected, rather than a primary hepatopathy. Cholestasis and mild cholangitis/cholangiohepatitis secondary to biliary inflammation are possible differential diagnoses. A subclinical suppurative component may also be present.
- **Spleen:** The very subtle miliary echotexture may be due to extramedullary hematopoiesis or possibly splenitis. Neoplasia is considered much less likely. A fine needle aspirate could be pursued to confirm this suspicion.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Further diagnostics may include obtaining a urine sample to perform cytology or a traumatic wash via urinary catheter. Although fine needle aspiration is possible, it carries the risk of disseminating tumour cells along the needle tract throughout the abdomen, and is not recommended.

Obtaining a urine sample to perform the CADET® BRAF test is possible, however, 20% of urothelial carcinomas do not have the mutation that this test assesses for, therefore, a negative result does not exclude neoplasia.

A urinalysis, culture and sensitivity are recommended, as secondary bacterial infections are possible. Treatment with enrofloxacin pending the culture and sensitivity may be considered.



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A non-steroidal anti-inflammatory, such as meloxicam or deracoxib, both of which have anti-neoplastic effects, may be prescribed in the interim to help alleviate any discomfort Waylon may be experiencing, in addition to gabapentin.

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Thoracic radiographs (3 views) are suggested to evaluate the sternal lymph nodes

Waylon may eventually require a stool softener, such as PEG 3350 or psyllium, if she begins demonstrating signs of tenesmus.

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Surgical resection of the prostate is possible, but is an extremely aggressive procedure with severe consequences (urinary incontinence).

Referral to an oncologist is suggested to discuss treatment options, such as non-steroidal anti-inflammatories, toceranib (Palladia®), etc.

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If aggressive chemotherapy will not be pursued, treatment with toceranib (Palladia®), a tyrosine kinase inhibitor, is suggested. This medication can help slow down the progression of the tumour. It is administered by mouth three days a week, for example, Mondays, Wednesdays, Fridays. Routine blood work, consisting of a CBC and serum biochemical profile, is required to monitor for neutropenia and elevated liver enzyme activities.

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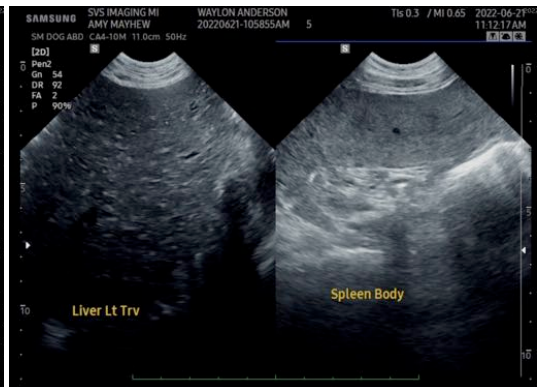
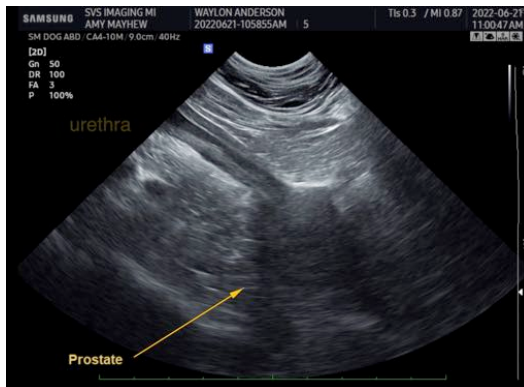
A fine needle aspirate of the spleen may be performed to confirm the suspicion of extramedullary hematopoiesis or splenitis.

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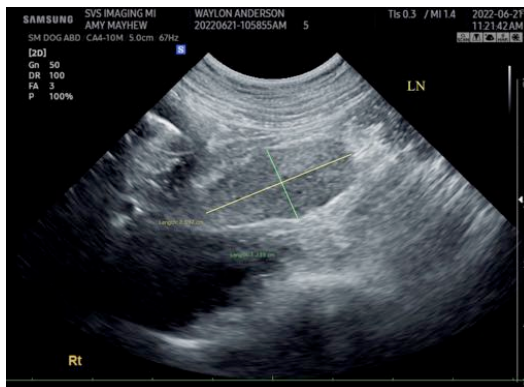
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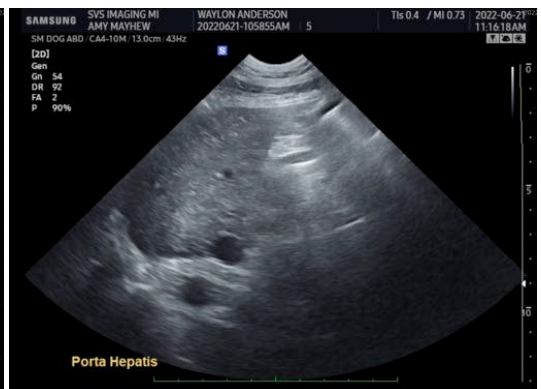
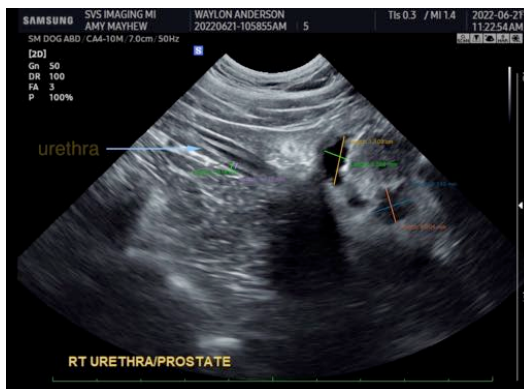
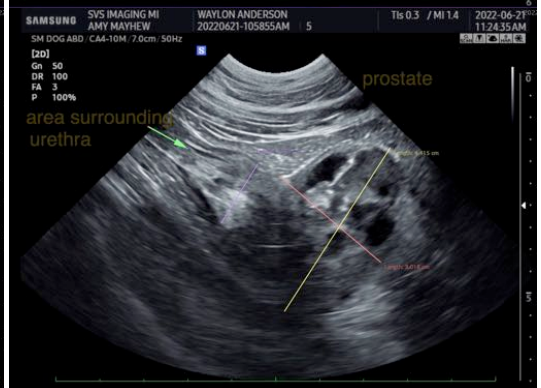
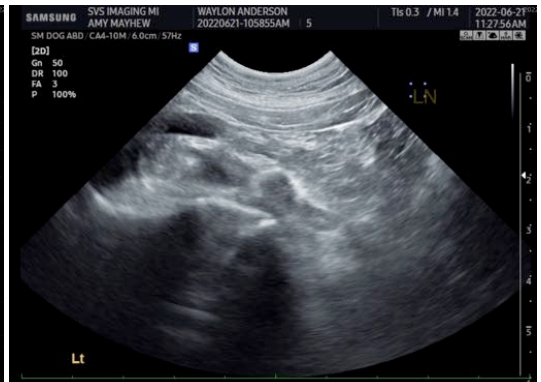
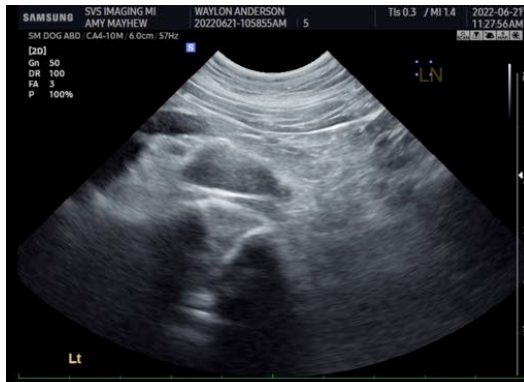
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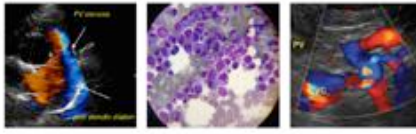
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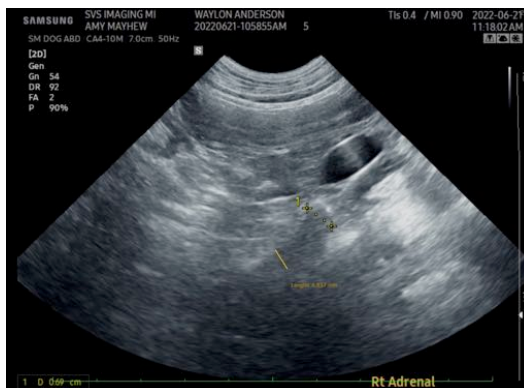
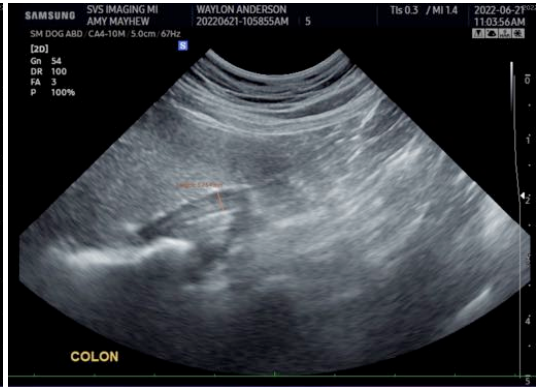
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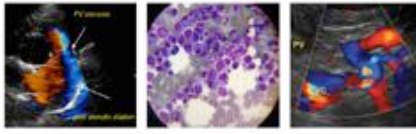
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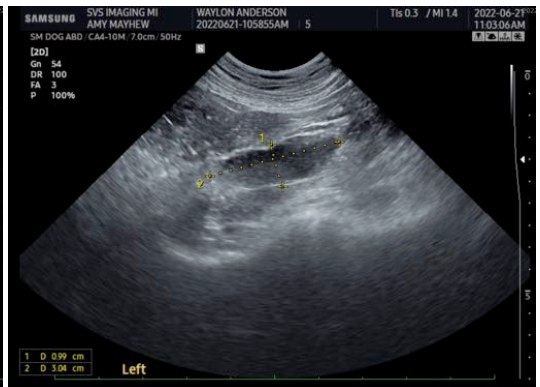
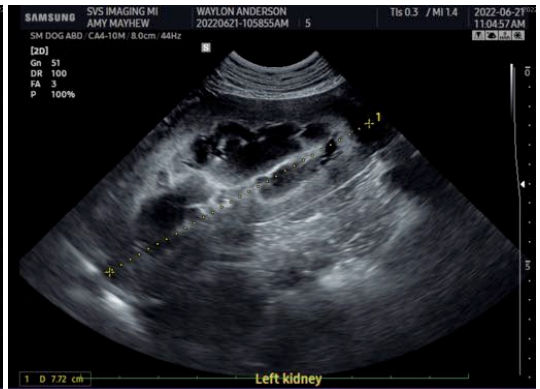
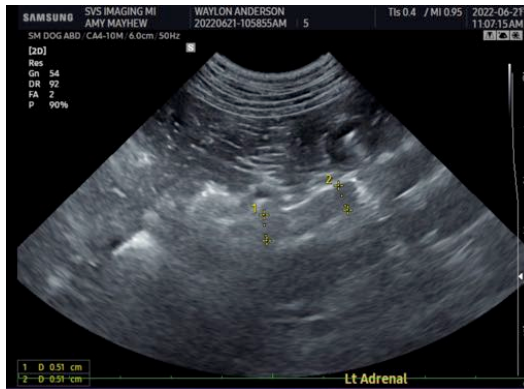
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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