

**DATE PRESENTING CLINICAL SIGNS**

3/18/22 Acute onset PD. No increase in urination. Elevated BUN- concern for GI bleed vs other. Normal urine concentration. Normal Crea. H/O heart disease, pancreatitis and cervical IVDD.

**PATIENT**

Wesley Silverstein

Current Medications: Vetmedin 1.25mg ½ BID, Provable DC 1 cap SID, Amantadine 5mg SID, Cerenia 16mg ½ SID, Methocarbamol 500mg 1/8 BID, Optimune EOD PRN, Cetirizine ¼ BID PRN, Gabapentin.

Lab Results: See attached.

**SPECIES**

Canine

Date of Previous IntraPet Ultrasound: 5/28/21. See attached.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

**BREED**

Chihuahua

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****SEX**

Neutered Male

**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, polyps or a mass. There is a high index of suspicion for a cystolith casting a dirty shadow (ventral wall). Abdominal radiographs with the colon emptied, or a re-evaluation of the urinary bladder by ultrasound, standing and in lateral and/or dorsal recumbency, shifting the position of the cystolith, would help confirm its presence.

**AGE**

4/19/07

The prostate is homogenous and within normal limits for a neutered male.

**WEIGHT**

6.4 Pounds

The left kidney is within normal limits in size for the patient's weight (3.54 cm). The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, are preserved. Very small, punctate, mineralizations of the diverticulae are present, in addition to multiple, very small nephroliths. There are no signs of pyelectasia. The surrounding mesentery is not hyperechoic.

**INTERPRETED BY**

Lisa Carioto, DVM,  
DVSc, Diplomate  
ACVIM

The right kidney is within normal limits in size for the patient's weight (3.13 cm). The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, are preserved. Very small, punctate, mineralizations of the diverticulae are present, in addition to multiple, very small nephroliths. There are no signs of pyelectasia. The surrounding mesentery is not hyperechoic. A round, anechoic structure with smooth, sharply demarcated thin walls with distal acoustic enhancement, consistent with a cyst, is observed. The cyst does not disrupt the capsule.

**IMAGING PERFORMED BY**

Andi Parkinson RDMS

**Adrenal Glands****HOSPITAL NAME**

Timonium AH

The left adrenal gland measures 0.61 cm at the cranial pole, 0.46 cm at the caudal cm and 1.26 cm in length. The cranial pole is nodular, although a mass is not visualized. The rounded effect may be due to the development of a benign adenoma. There are no signs of metastases or thrombi in the phrenicoabdominal veins or the surrounding vasculature. Although this finding is not considered clinically significant for the moment, the adrenal glands should be re-evaluated in a few months.

**REFERRING VET**

Dr. McMichael

The right adrenal gland measures 0.42 cm at the cranial pole, 0.55 cm at the caudal pole, and 1.45 cm in length. No abnormalities are noted in the gland's shape, overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

**INVOICE**

36294

**Spleen**

Previously splenectomized, as per Wesley's previous ultrasound report. The area where the spleen used to be, is normal.

**Liver**

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver's echotexture is homogeneous and is within normal limits in echogenicity, i.e. it is hypoechoic to the spleen and isoechoic to the kidneys. No abnormalities are observed with the hepatic vessels.

The gall bladder wall appears to be within normal limits in thickness and echogenicity. A mild to moderate amount of echogenic material (sludge) is present within the GB. The cystic and common bile ducts are not dilated or tortuous.

### ***Gastrointestinal***

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

The small intestinal wall thickness is 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 limb is heterogeneous with hyperechoic areas dispersed haphazardly throughout its parenchyma. Differential diagnoses include fibrosis due to previous episodes of pancreatitis.

In the left limb, no overt abnormalities are observed with regard to the pancreas' echogenicity or echotexture. There is no evidence of hyperechogenicity of the surrounding mesenteric fat.

### ***Other***

Lymph nodes: No abnormalities are observed.

Abdominal effusion is not visualized.

## **ULTRASONOGRAPHIC FINDINGS**

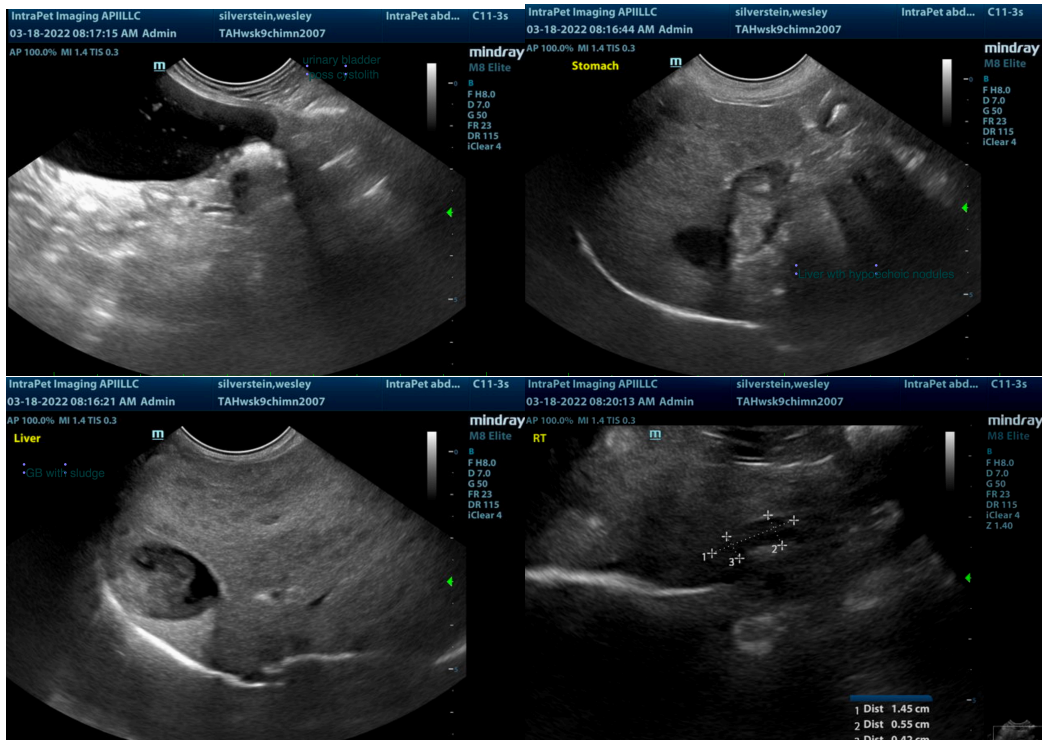
- An obvious cause for the polydipsia, elevated urea, and regenerative anemia was not identified on today's abdominal ultrasound.
- A cystolith may be present along the ventral wall of the bladder, but further evaluation is required to perform.
- The rounded, nodular, cranial pole of the left adrenal gland may be due to a benign adenoma or hyperplasia. There are no signs of a mass. The gland measures at the high end of normal reference range, therefore, a re-evaluation of the adrenal glands is recommended in 2-3 months
- The nephroliths and mineralizations observed in both kidneys may be genetic and/or diet related. They can also be due to early degenerative changes. There are no signs of an obstruction. The remainder of the kidneys are normal in appearance.
- The diffuse hyperechogenicity of the liver is highly suggestive of a vacuolar hepatopathy, which may occur due to stress (chronic illness) or hyperadrenocorticism. 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. There are no obvious signs of neoplasia. The presence of sludge in the gallbladder is most likely clinically insignificant; however, the client should be asked about signs of gastroesophageal reflux. Signs of cholecystitis are not appreciated.

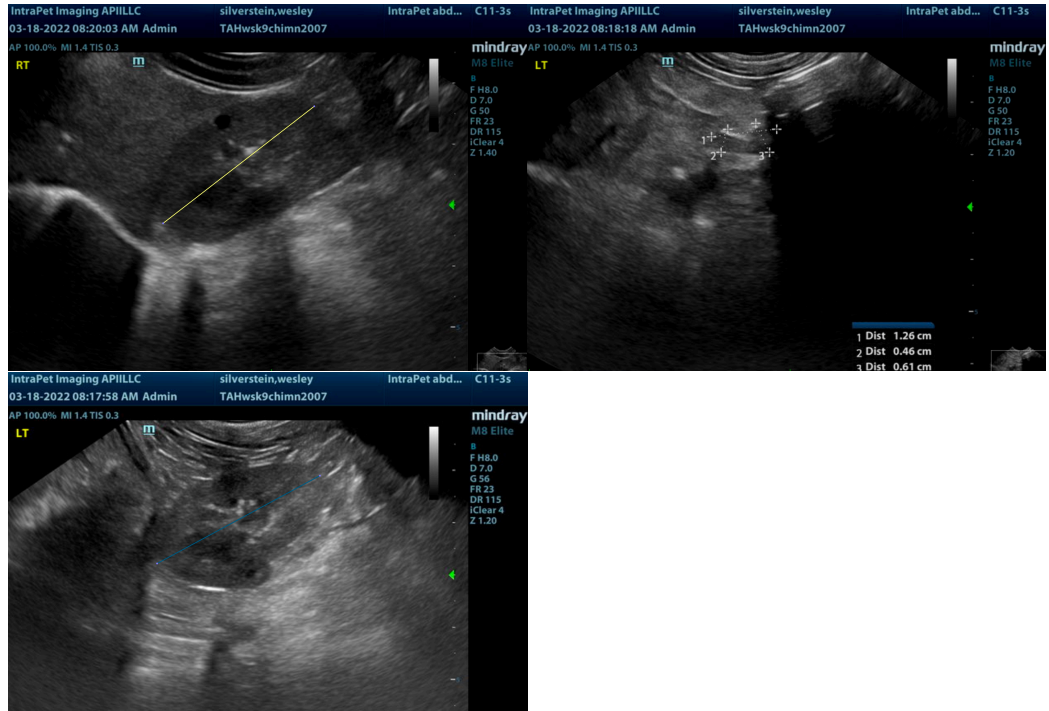
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Abdominal radiograph or a re-evaluation of the ultrasound of the bladder is recommended to confirm the presence of the cystolith. Evaluation of the diet is recommended based on the mineralizations, nephroliths, and the fact that 6-20 calcium oxalate crystals were observed on his urinalysis. However, I do not know if the urine sample was evaluated within a ½ hour of obtaining it.

Wesley's CBC is consistent with regenerative anemia due to iron deficiency, i.e., reticulocytes and thrombocytosis are present, as is an elevated urea concentration. None of the medications he is currently receiving cause GI bleeding. However, it would be worthwhile asking Mr. or Mrs. Silverstein whether or not Wesley could have gotten into medications, such as non-steroidal anti-inflammatories. Hypoadrenocorticism may cause GI bleeding, and can also cause the elevated urea, phosphorus, mild dehydration noted on his serum biochemical profile and his polydipsia. A baseline cortisol is suggested to exclude hypoadrenocorticism if clinical signs persist. Pain can also cause polydipsia, which may be due to a recent episode of back pain as a result of intervertebral disc disease.

The fact that there are no target lesions in the liver does not rule out neoplasia with certainty. A fine needle aspirate of the liver or tissue biopsy is required to achieve a definitive diagnosis. However, the appearance of the hepatic nodules is much more suggestive of nodular hyperplasia/regeneration.





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.

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