**PATIENT**

Scarlett Gray

SPECIES

Canine

BREED

Labrador Retriever

SEX

Spayed female

AGE

6 years

WEIGHT

82.2 lbs

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

Rachel Runnells, CVT

HOSPITAL NAMESVS Imaging Kansas
City**REFERRING VET**

Dr. Oetting

INVOICE

31741

DATE

7/1/22

PRESENTING CLINICAL SIGNS

History: 6/13 Presented for pollakiuria.

Abnormal PE/Chem/CBC/UA Results: 6/13 UA: S.G. >1.050, pH 8, Leu 100, Prot 30, Bld 250, WBC>50, RBC>50, Struvites 6-20. Rx Cephalexin, Carprofen, Gaba. 6/21 Re-eval UA: S.G. 1.034, Leu 25, Prot 30, Bld 250, WBC 39, RBC>50, Struv 0. 6/22 Cysto/Culture & Rads. Rx Enro while awaiting culture results. No growth on culture. Rads: no radiographic stones or visible mass. 7/11: Re-eval UA after second antibiotic and longer Gaba: WBC and prot resolved. RBC still >50.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**Urinary System**

The **urinary bladder** is adequately distended with anechoic contents. The wall is thickened, measuring up to 1.8 mm along the dependent wall. It is mildly irregular. An echogenic structure with a corresponding acoustic shadow is noted along the dependent wall. The echogenic structure, which is consistent with a cystolith, measures 2 cm in length. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, polyps or a mass. Ureteral papillae are visualized and unremarkable.

Standing (transverse view)

- The ventral wall measures 4.1 mm
- The dorsal wall 3.34 mm

Kidneys

The **left kidney** measures 6.50 cm. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. Mineralizations of the diverticulae and pelvis are present, in addition to multiple, small nephroliths. Pyelectasia is not observed. Blood flow appears within normal limits, however, panting artifact affects the quality of the exam. The surrounding mesentery is not hyperechoic.

The **right kidney** measures 6.22 cm. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. Mineralizations of the diverticulae and pelvis are present, in addition to multiple, small nephroliths. Pyelectasia is not observed. Blood flow is within normal limits. The surrounding mesentery is not hyperechoic.

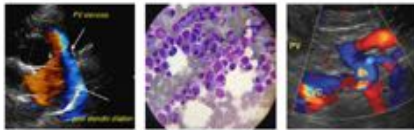
Aortic bifurcation/trifurcation No abnormalities observed.

Adrenal Glands

The **left adrenal gland** measures 0.53 cm at the cranial pole, 0.41 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.

The **right adrenal gland** measures 0.61 cm at the cranial pole, 0.58 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.

Spleen

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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. Occasional hypoechoic regions are noted throughout the body, however, they are artifact, i.e., shadowing caused by the ribs.

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Liver

There are no obvious signs of hepatomegaly. The liver's borders are smooth and vary between sharp to very mildly rounded. A mildly heterogeneous echotexture appears to be caused by hyperechoic walls of portal veins and hyperechoic structures within the bile ducts (choledocholithiasis). It appears to be within normal limits in echogenicity. Focal lesions are not observed and no other abnormalities are observed with the hepatic vessels.

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The **gallbladder** (GB) is mildly dilated (consistent with a fasted individual). There is no evidence of echogenic material within the GB or edema surrounding it. The GB wall is within normal limits in thickness and echogenicity. As mentioned above, occasional choledocholithiasis is visualized, without signs of an obstruction. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous.

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Gastrointestinal

The stomach is void of ingesta, however, gas is present. The gastric wall is within normal limits in thickness and the wall layers are well defined. Peristalsis is difficult to interpret due to panting artifact.

WEIGHT

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A large amount of gas is present in the gastrointestinal tract. The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. Abnormally dilated loops of bowel are not observed.

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The colonic wall is not thickened and mural detail is considered normal. Formed stools are present in the colon, as well as gas.

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Pancreas

No overt abnormalities are observed with the architecture, contours, echogenicity or echotexture of the pancreas. There is no evidence of hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis are not present.

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Other

Lymph nodes No abnormalities are observed

Abdominal effusion is not visualized.

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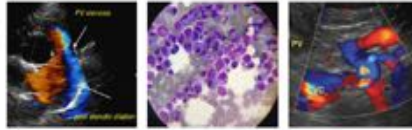
ULTRASONOGRAPHIC FINDINGS**INVOICE**

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- **Urinary bladder:** Single cystolith with thickened wall of the urinary bladder. The latter is attributed to chronic inflammation. There are no signs of an obstruction.
- **Kidneys:** Bilateral mineralization and very small nephrolithiasis. There is no evidence of pyelectasia or hydroureter. Familial and dietary factors may influence the development of mineralization and nephrolithiasis.

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- **Liver and gallbladder:** The hepatic parenchymal changes are non-specific, however, Labrador retrievers are predisposed to a copper hepatopathy. Therefore, an evaluation of Scarlett's hepatic liver enzymes and function (urea, albumin, glucose and cholesterol) is suggested. Note, the sonographic changes may be a variation of normal.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

CBC and serum biochemical profile, including a GGT, cholesterol and total bilirubin. A SDMA and urine specific gravity are also suggested to assess concentrating ability in relation with blood work. A fasted sample is suggested to evaluate the total calcium. (Additional serum and plasma may be obtained at the same time (and frozen) in case an ionized calcium, PTH, vitamin D are indicated in the future).

Cystotomy vs. percutaneous cystolithotomy (PCCL), which is performed by an internist who specializes in interventional radiology.

I do not want to alarm the client as the the sonographic changes may be a variation of normal, however, if the blood work results are abnormal, a liver biopsy (pending a coagulation profile) may be worthwhile pursuing at the same time as urinary procedure.

Basic hygiene should be pursued on a daily basis with chlorhexidine 0.025-0.05%, rinsed with luke warm water, and ensuring the area is kept dry to decrease risk of infection.

Ensure adequate water consumption, and allow for frequent voiding

Gabapentin may be prescribed if signs of pollakiuria recur

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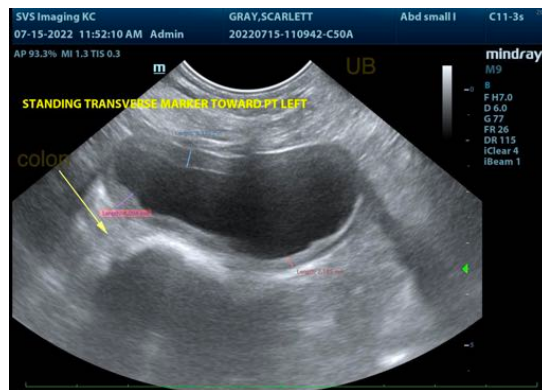
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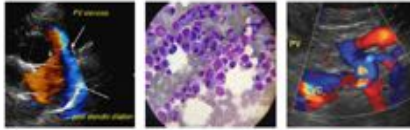
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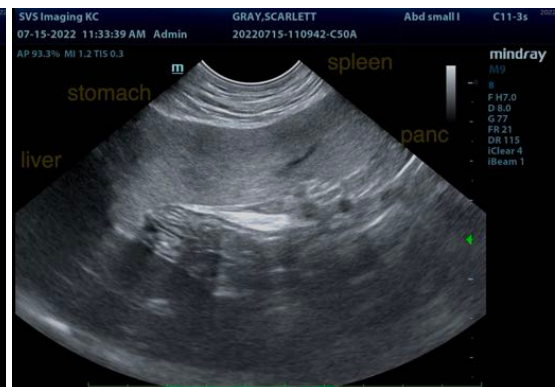
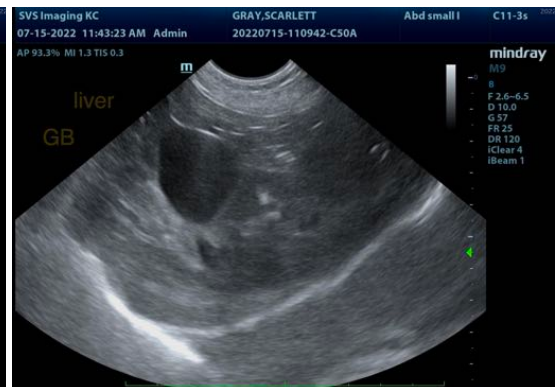
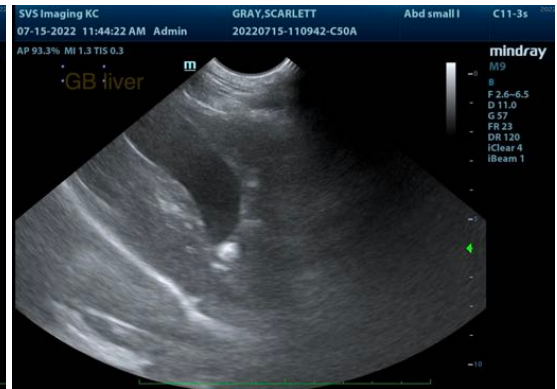
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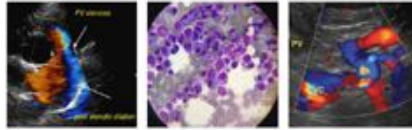
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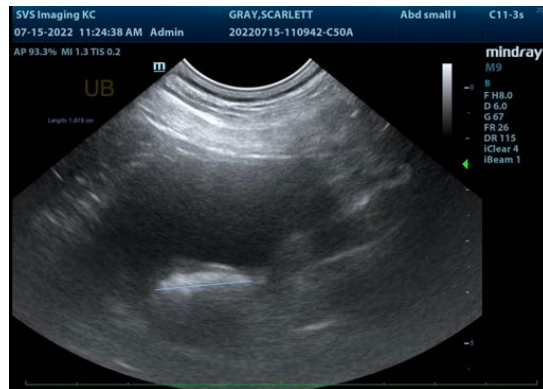
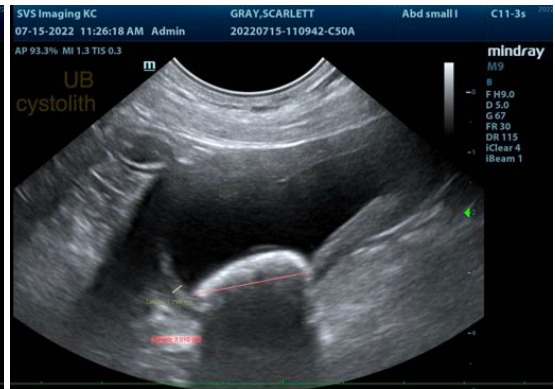
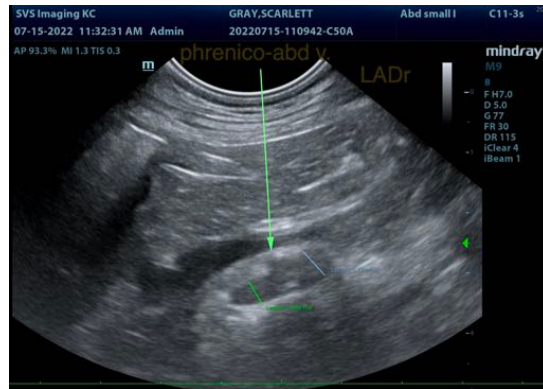
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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