

**PATIENT**

Barley Seaton

**SPECIES**

Canine

**BREED**

Schnauzer Cross

**SEX**

Neutered male

**AGE**

4 ½ years

**WEIGHT**

5.5 kg

**INTERPRETED BY**

Lisa Carioto, DVM,  
DVSc, Diplomate  
ACVIM

**IMAGING PERFORMED BY**

Kelly Reshny, RVT

**HOSPITAL NAME**

Beatties PH Ancaster

**REFERRING VET**

Dr. Davis

**INVOICE**

30024

**DATE**

4/29/22

**PRESENTING CLINICAL SIGNS**

History: hematuria noted grossly on urine collection. o notes he will sometimes lift his leg but not pee. O reports nausea and vomiting ~eod since last visit despite being off his medication now for over 1 week  
Abnormal PE/Chem/CBC/UA Results: ongoing uti WBC >50 /HPF RBC >50 /HPF BACr None detected BACc None detected sqEPI >10 /HPF nsEPI >10 /HPF HYA >1 /LPF nhCST None detected CRY 1 - 5 /HPF CaOxDi None detected STR <1 /HPF BIURAT None detected BILI None detected Collec Free Catch Color Orange Clar Very Cloudy SG 1.044 pH 5

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder is adequately distended. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra. A trivial amount of free floating sediment is observed, some of which scintillates (mineralized sediment). A hyperechoic structure measuring approximately 8.4 mm. An acoustic shadow is produced by the structure, which is consistent with a cystolith. There is no evidence of polyps or a mass.

The urinary bladder was re-evaluated at the end of the study. The cystolith appears to be present in the proximal urethra. The cystolith appears to be the same as the original, measuring 8.6 mm.

The prostate is not visualized.

**Kidneys**

The **left** kidney measures 3.67 cm. The capsule is smooth. A very mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae are present, without evidence of nephroliths or pyelectasia. The surrounding mesentery is mildly hyperechoic.

The **right** kidney measures 4.00 cm. Findings are similar to the left kidney. Early nephrolithiasis may be developing, i.e., very subtle acoustic shadowing is present.

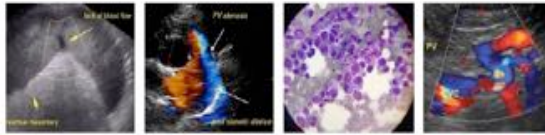
**Aortic bifurcation/trifurcation**

No abnormalities observed.

**Adrenal Glands**

The **left** adrenal gland measures 0.35 cm at the cranial pole, 0.37 cm at the caudal pole and 1.31 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.

The **right** adrenal gland measures 0.48 cm at the cranial pole, 0.42 cm at the caudal pole and 1.90 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**

Barley Seaton

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.

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**Liver**

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Mild hepatomegaly is suspected, however, this is better characterized at the time of the ultrasound or with radiographs. Liver borders are smooth and sharp. Its echotexture is homogeneous, however, it is mildly hyperechoic, i.e. it is almost isoechoic to the spleen, however, it is hypoechoic to the falciform fat. The mesentery surrounding the liver and spleen is mildly hyperechoic. The walls of the portal veins are mildly hyperechoic, as well as some of the hepatic arteries. Perivascular cuffing is also present, which may be due to deposition of fat. Mineralization, fibrosis, as well as some inflammation may be present. Focal lesions are not present, nor are signs of congestion of the hepatic vessels.

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The gallbladder wall is within normal limits in thickness and echogenicity. A trivial amount of echogenic material is present within the GB. The cystic and common bile ducts are not visualized, however, there are no obvious signs of an obstruction.

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**Gastrointestinal**

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. Abnormally dilated loops of bowel are not observed.

A large amount of gas and ingesta are present in the transverse colon.

The colonic wall is not thickened and mural detail is considered normal. Semi-formed stools are present within the colon.

**IMAGING PERFORMED BY**

Kelly Reshny, RVT

There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction in the gastrointestinal tract.

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**Pancreas**

No overt abnormalities are observed with the echogenicity or echotexture of the pancreas, however, the mesentery in the cranial abdomen is mildly hyperechoic.

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**Other**

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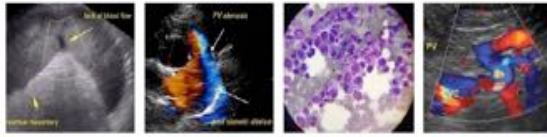
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**Lymph nodes** No abnormalities are observed

**Abdominal effusion** is not visualized.

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**ULTRASONOGRAPHIC FINDINGS**

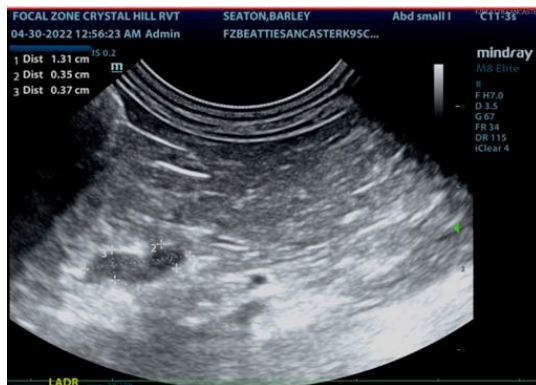
- A single cystolith is present within the urinary bladder. Although an obstruction is not evident, the cystolith was visualized in the proximal urethra when the urinary bladder was re-evaluated at the end of the study. The mucosa of the urinary bladder is smooth and regular, despite the presence of the cystolith.
- The diffuse hyperechogenicity of the liver is highly suggestive of a vacuolar hepatopathy, which may occur due to stress (chronic illness). Differential diagnoses, such as hepatitis, is considered less likely, however, cholestasis and cholangitis/cholangiohepatitis with a secondary bacterial infection cannot be excluded.
- The mineralizations in both kidneys may be genetic and/or diet related. There are no signs of an obstruction. Early degenerative changes are considered less likely. Pyelonephritis cannot be excluded based on the hyperechoic mesentery surrounding both kidneys.
- Pancreatitis cannot be excluded despite the lack of sonographic abnormalities.

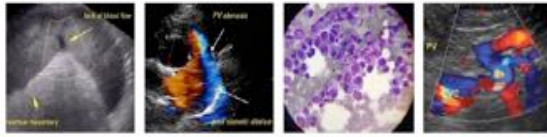
**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

A urine culture and sensitivity is recommended to exclude a urinary tract infection due to the presence of the cystolith, as well as a pyelonephritis due to the mildly hyperechoic mesentery surrounding both kidneys.

Blood work, including a GGT and a spec cPL, is recommended to assess the liver and exclude pancreatitis, respectively. A fine needle aspirate of the liver may be performed depending on the results.

A hepatic biopsy may be considered at the time of Barley's cystotomy, depending on his blood work results. A coagulation profile is recommended prior to performing a liver biopsy, in addition to the administration of vitamin K (0.5 mg/kg SQ q8-12h for 1-3 doses) prior to performing a liver biopsy.





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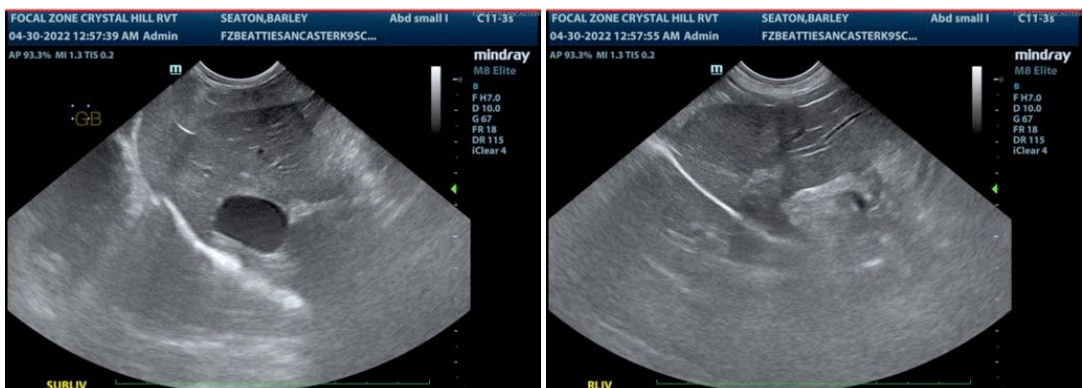
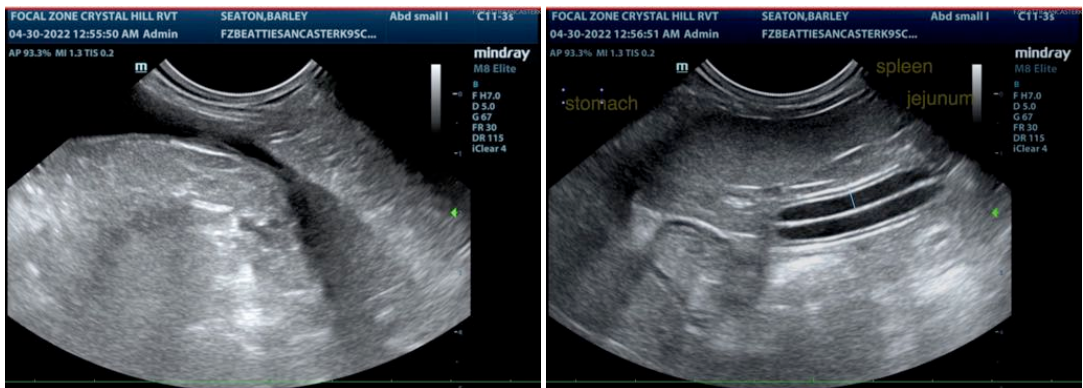
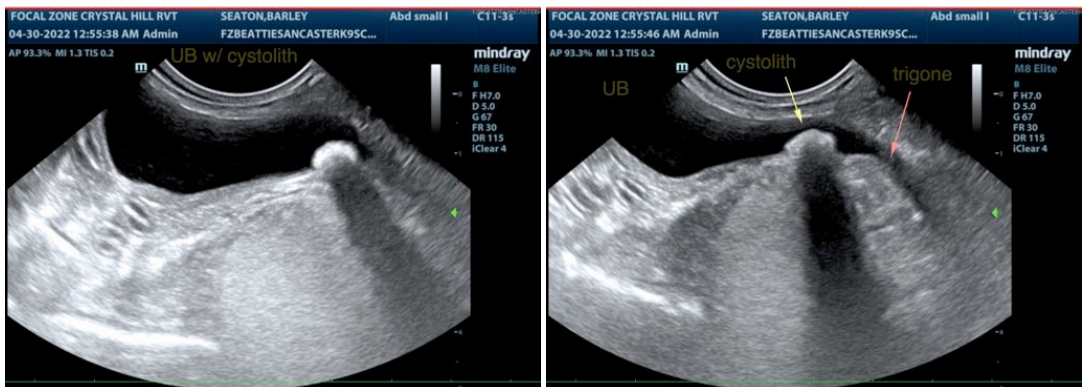
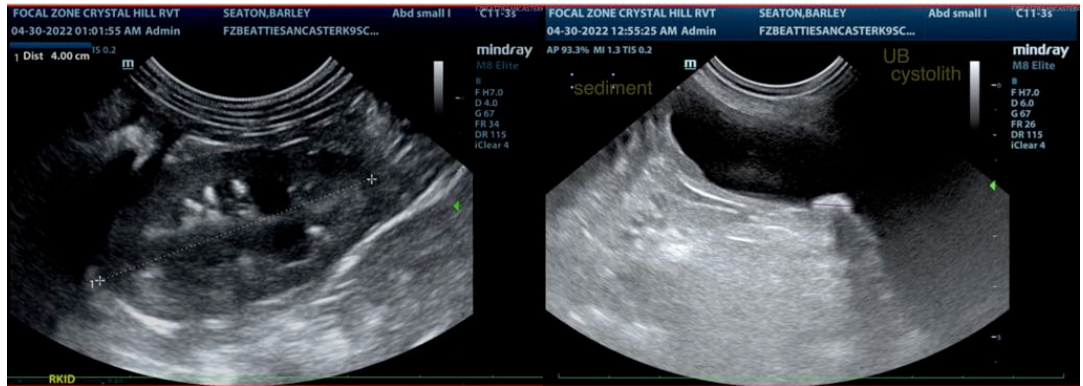
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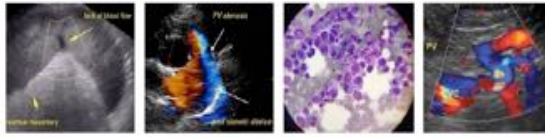
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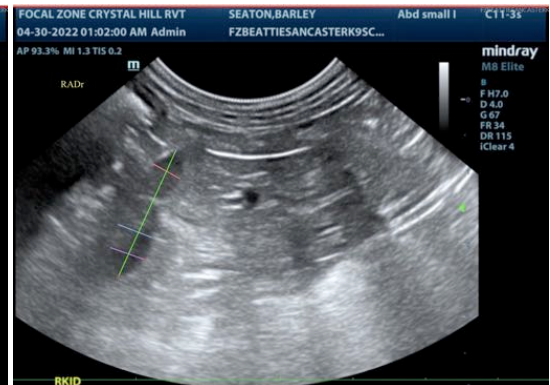
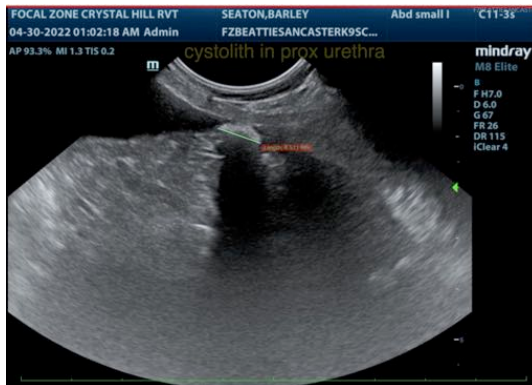
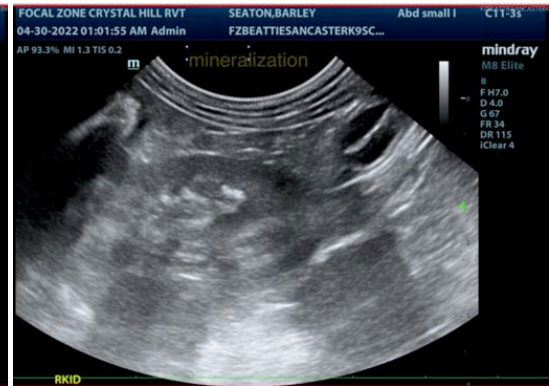
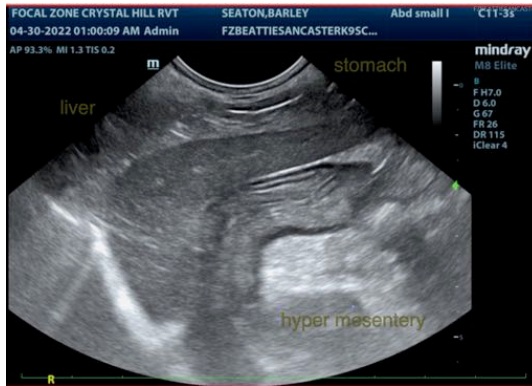
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

[Lisa.Carioto@sonopath.com](mailto:Lisa.Carioto@sonopath.com)