

**DATE PRESENTING CLINICAL SIGNS**

5/3/22 Presented on 4/24/22 for blood in urine and frequent urination.

**PATIENT**

Haylay Holdorf

Current Medications: Prescribed 4/24/2022: Amoxicillin 100mg Tablet  
 Instructions: Give 1.5 tablets every 12 hours for 5 days. Rimadyl 25mg Caplet Instructions: Give 1 caplet every 12 hours for 4 days  
 Radiographs: 4/24/2022: Radiographs (Abdomen) mineral opacity in area of gall bladder, moderate amount of ingesta in stomach, no overt discrete bladder stones, however, soft tissue opacity of bladder may be due to empty bladder vs blood clot vs mass vs single large stone though not of mineral opacity, osteophytes/arthritis at femoral neck bilaterally  
 Date of Previous IntraPet Ultrasound: No previous.  
 Sedation: Not required to complete full diagnostic ultrasound.  
 Stat Report: Not requested.

**SPECIES**

Canine

**BREED**

Shih Tzu

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

Spayed Female

**Urinary System**

The urinary bladder is minimally distended with anechoic urine. The Bladder wall appears diffusely thickened with a slightly irregular, scalloped mucosal surface measuring between 0.54 and 0.71 cm in thickness. No focal mass lesions are visualized. The area of the trigone, ureteral papillae and proximal urethra appear free of any mass lesions or calculi. There is a scant amount of free fluid and inflammation surrounding the urinary bladder. Findings are most consistent with severe cystitis, although an underlying neoplastic process cannot be excluded as a possibility.

**AGE**

8/2/10

**WEIGHT**

25 Pounds

The left kidney has a normal shape and size (5.02 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**INTERPRETED BY**

Kathleen Sennello DVM,  
 MS, Diplomate ACVIM  
 (Small Animal Internal  
 Medicine)

The right kidney has a normal shape and size (4.32 cm) with mild pyelectasia at 0.21 cm. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**IMAGING PERFORMED BY**

Rachel Brillhart RDMS

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.74 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

**HOSPITAL NAME**

Banfield White Marsh

The right adrenal gland is normal in size measuring 0.64 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

**REFERRING VET**

Dr. Gutwillig

**Spleen**

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

**INVOICE**

37312

**Liver**

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder lumen is mildly distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of shadowing, mineralized, dependent debris, most consistent with small stones/sandy debris. The bile duct is normal.

### ***Gastrointestinal***

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

### ***Pancreas***

The spleen is subjectively normal in size. The spleen echotexture is heterogenous and mottled, the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

### ***Free Abdomen***

There is a scant amount of free fluid surrounding the urinary bladder. There is no lymphadenopathy visualized. The omentum around the urinary bladder is hyperechoic.

## **ULTRASONOGRAPHIC FINDINGS**

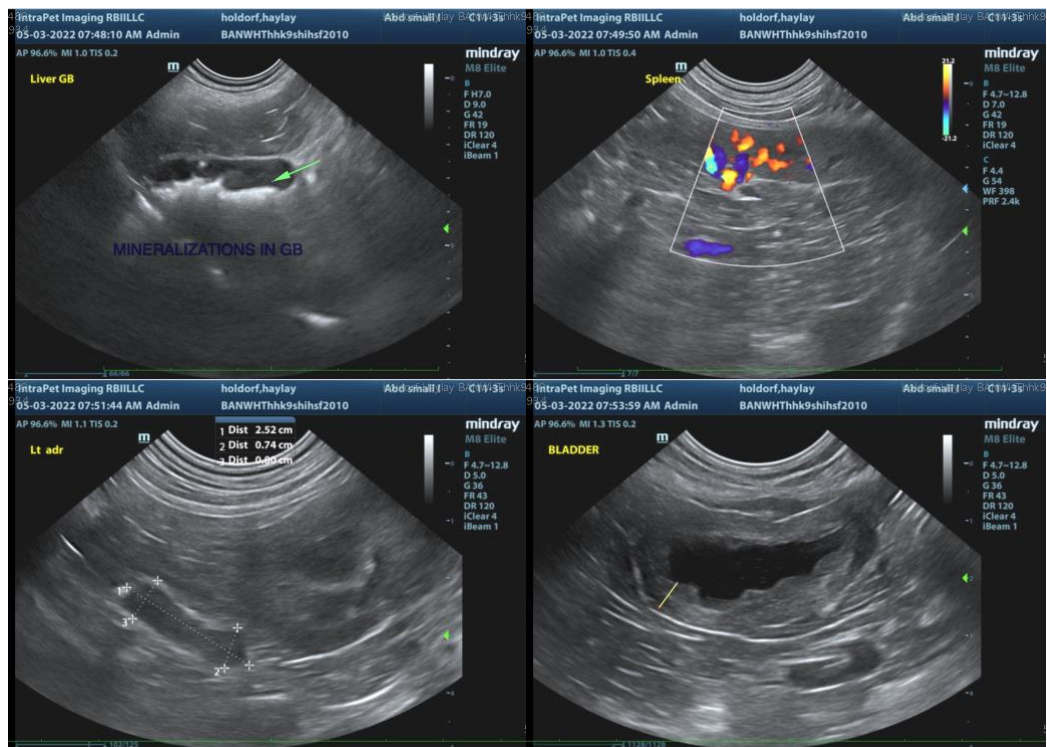
- Thickened, irregular urinary bladder wall with surrounding scant free fluid and inflammation – findings are most consistent with severe bacterial cystitis, although an underlying neoplastic process cannot be excluded as a possibility.
- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.
- Prominent, mottled pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Heterogeneous liver – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.
- Shadowing, dependent mineralizations within the urinary bladder – findings are most consistent with sandy debris or small stones.

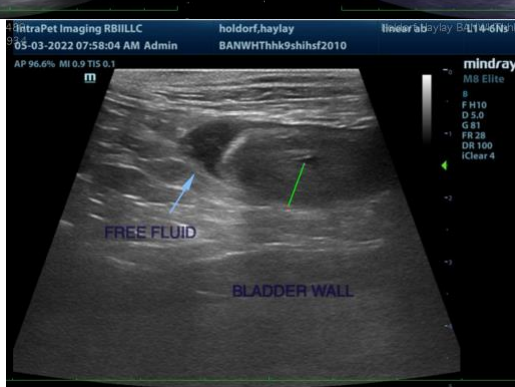
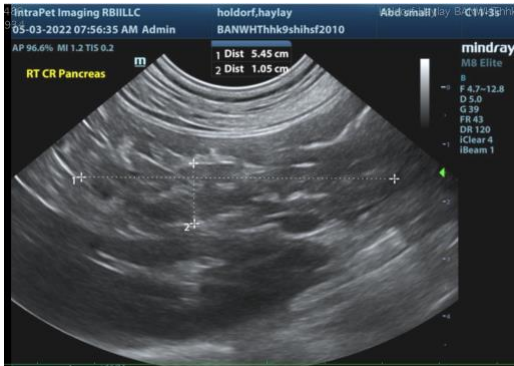
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The urinary bladder is minimally distended and has a thickened, irregular bladder wall. No focal mass lesions or calculi are visualized. Findings are most consistent with severe cystitis. Recommend urinalysis and culture and reevaluation of the urinary bladder mid therapy to ensure it is improving. Antibiotic therapy should be continued two weeks beyond normalization of the urinary bladder wall. If bacterial cystitis is not identified based on culture and urinalysis, then consider obtaining biopsies of the bladder wall for culture and histopathology.

The liver appears significantly heterogeneous. Correlate with bloodwork findings. If liver enzymes are not elevated, then this could be within normal limits for this individual. If liver enzyme elevations are present, consider a liver function test and fine needle aspirate of the liver.

Additionally, there are some small stones/sandy debris within the gallbladder. At this time, there is no significant changes observed, but future obstruction is possible. If liver enzyme elevations are present, you could consider starting Ursodiol.





**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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