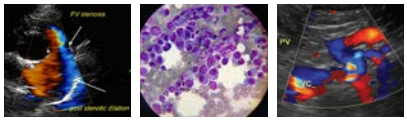
IMAGING PERFORMED BY

IntraPet.com



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**DATE**

1/19/23

**PATIENT**

Audrey Greenhouse

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Spayed Female

**AGE**

3/31/08

**WEIGHT**

8.4 Pounds

**INTERPRETED BY**

Beth Johnson, DVM DACVIM

**HOSPITAL NAME**

Everhart Vet Hospital

**REFERRING VET**

Dr. Notarangelo

**INVOICE**

44383

## PRESENTING CLINICAL SIGNS

Year long inappropriate elimination (stool and urine) noted in March of 2022. Pet seen multiple times in past year for unexplained hematuria with negative cultures. Hematuria appeared to be transient, suspect cystitis vs renal hemorrhage. Seen 12/9/22 for latest bout of hematuria and possible constipation, PE showed moderate weight loss.
Labs unremarkable aside from neutrophilia and hematuria. Incidentally, pet had nail grown into pad so suspect could have triggered cystitis.

Current Medications: None.
Lab Results: 12/9/22: neutrophil 13167, U/A SG 1.046, RBC>50. 7/15/22: urine culture negative. 5/28/22: neutrophil 24934, U/A SG 1.043, RG>50
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Rachel Brilhart, RDMS.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with occasional echogenic non-shadowing debris, most consistent with incidental suspended lipid in a cat, possibly combined with exfoliated cells, mucous and/or small blood clots. Both sterile inflammation as well as urinary tract infection can also present with echogenic debris. No masses observed. There is a pinpoint 0.11 cm in diameter non-shadowing mineral density, non-obstructive at the level of the trigone entering the proximal urethra, as well as a slightly larger 0.20 cm non-shadowing cystoliths along the dependent wall. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia or infarcts observed. Small non-obstructive nephrolithiasis noted bilaterally. The right kidney measured 4.04 cm. The left kidney measures 3.6 cm.

### *Adrenal Glands*

The right adrenal gland is normal in size (0.36 cm), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.39 cm), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

### *Spleen*

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

### *Liver*

The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. Mineral/sand debris is also noted. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

### *Gastrointestinal*

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestine demonstrates areas of thick muscularis layer relative to mucosa (disruption of the normal 1:3 muscularis:mucosa ratio). Small intestinal submucosa is slightly irregular, thick and hyperechoic, without evident loss of layering appreciated. The lumen is empty with no evidence of obstruction or foreign material.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

### *Pancreas*

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

### *Free Abdomen*

There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

## PRIMARY FINDINGS

- Urinary bladder debris with mineral/sand/pinpoint cystoliths present
- **Gallbladder debris with some sand/mineral debris noted** - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness, however, it can also be associated with hepatobiliary disease in cats and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.
- **Inflammatory bowel disease (IBD) pattern –** Thick muscularis has been reported with infiltrative bowel disease including both benign inflammatory disease as well as infiltrative neoplasia such as lymphoma. No aggressive lymphadenopathy, loss of layering, etc. is noted to make lymphoma more probable, but lymphoma cannot be definitively ruled out without tissue sampling.

## SECONDARY FINDINGS

- Age related kidney changes with small non-obstructive nephroliths noted bilaterally

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

In the face of negative urine culture(s) and no cystoliths, masses, etc., these urinary signs are most consistent with sterile cystitis or feline lower urinary tract disease (FLUTD).

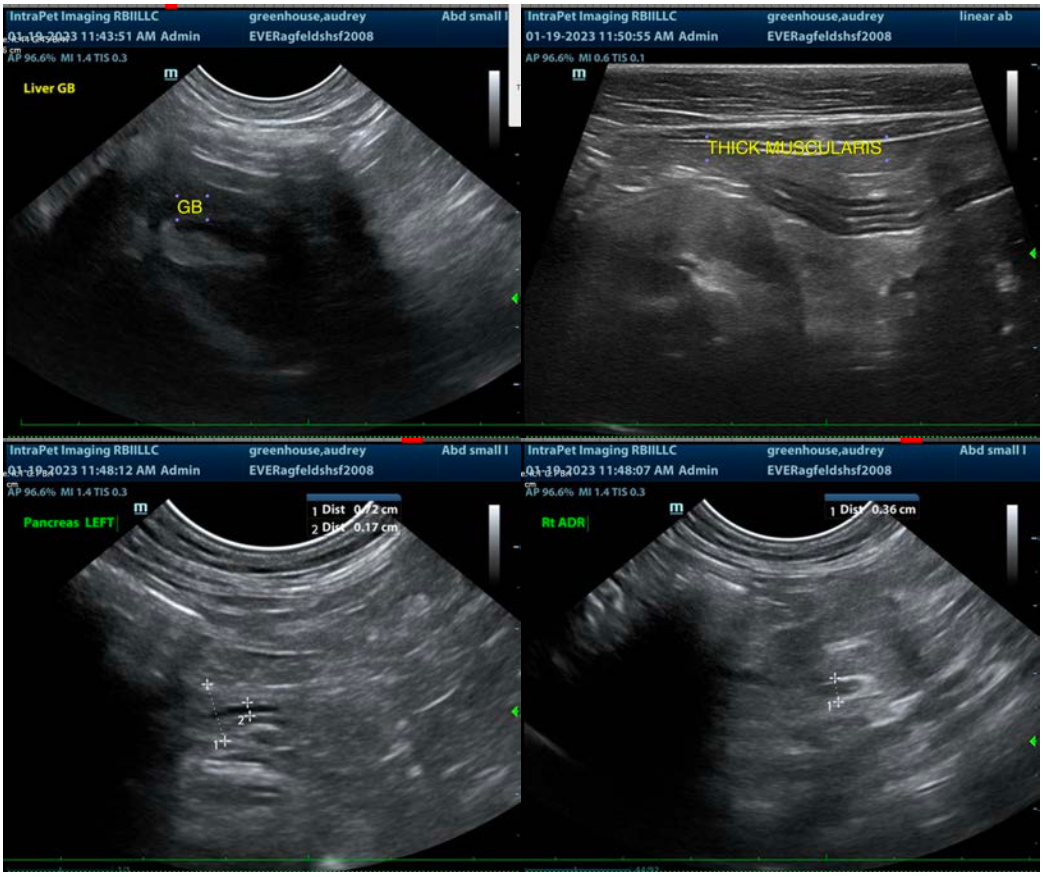
Recommendations include maximizing water consumption (water fountains, canned food, etc) as well as reducing stress (recommendations can be found at Indoor Cat Initiative out of The Ohio State University

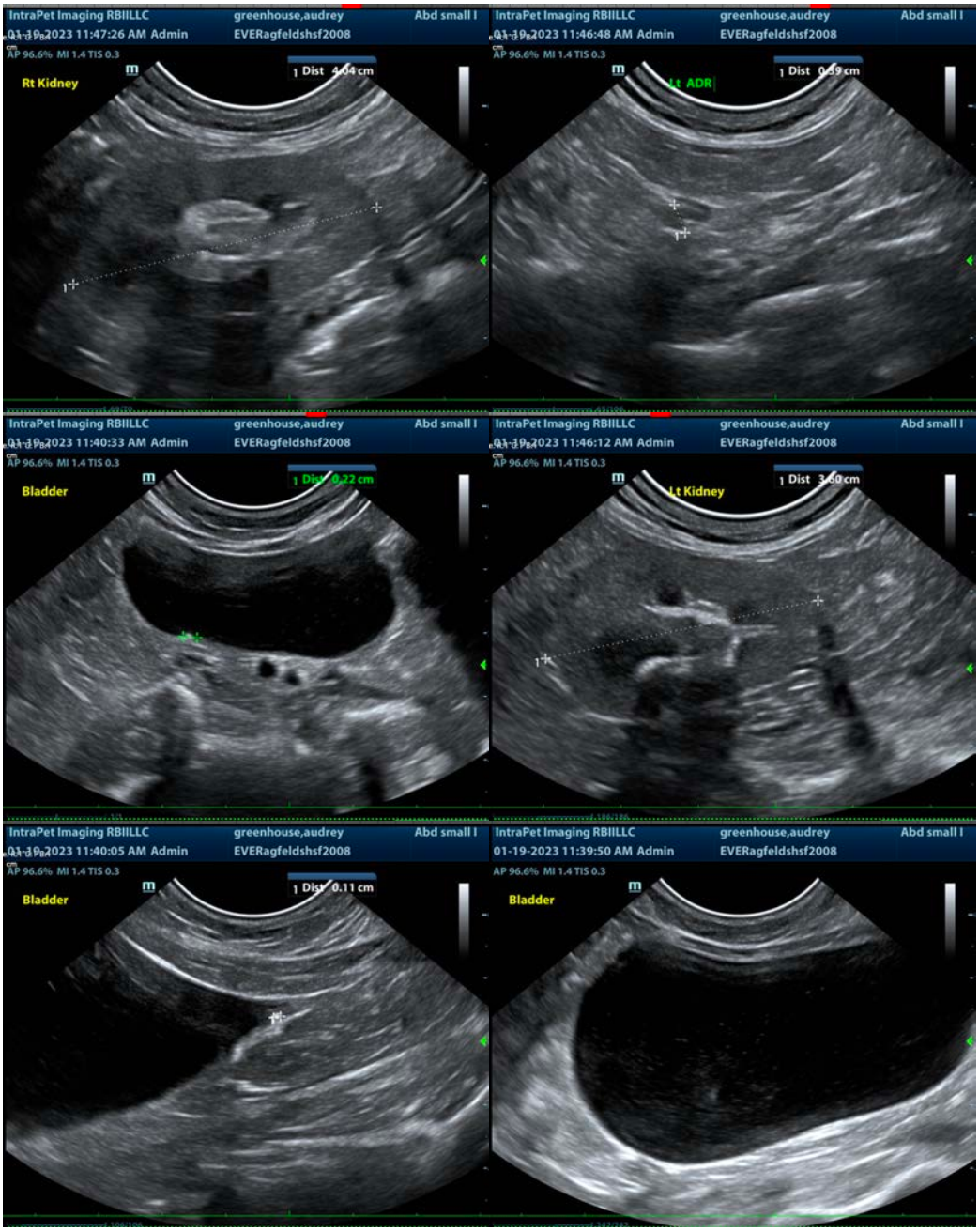
CVM). Transition to a urinary health diet such as Royal Canin Urinary SO (or similar) could also be considered.

Given the weight loss and mild bowel changes noted, a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.

If weight loss persists beyond management of the urinary disease/signs, then ultimately biopsies of the gastrointestinal tract may be necessary to definitively diagnose and therefore guide management of a concurrent infiltrative bowel disease, if present.

In the meantime, as parasitic disease can rarely affect the urinary tract as well as the gastrointestinal tract, empirical deworming with a 5-day course of Panacur is recommended.






**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.

**Beth Johnson**, DVM, DACVIM
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