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Clinical Sonography & Telecytology
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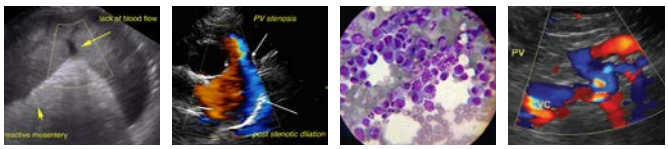

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Rocky Casper

SPECIES
Feline

BREED
DLH

SEX
Neutered Male

AGE
12 Years

WEIGHT
18.4 Pounds

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Dr. Arms

HOSPITAL NAME
Gilbertsville VH

REFERRING VET
Dr. Arms

INVOICE
44571

DATE
8/2/23

PRESENTING CLINICAL SIGNS

History of uroabdomen, bladder rupture unknown cause 2022 repaired with explore. Possible unkown trauma? Recent inappropriate urination x 1 month - noted to be urinating where laying down - New Azotemia. proteinuria and possible crystalluria. Tried renal diet but will not eat well and lost 1 lbs. Abnormal PE/Chem/CBC/UA Results: 7/7/23: BUN 45 [14-36], Creat 2.6 [0.6-2.4], SDMA 12.9 [<15], amyl 1536 [100-1200], PSL 29 [8-26] Plt 148 [200-500], neut 9594 [2500-8500] T4 2.4 [0.8-4.0] USG 1.031, pH 7.0, protein 3+, blood 2+, UP:C 1.5 tried renal diet 7/26/23:BUN 41 [14-36], Creat 2.8 [0.6-2.4], SDMA 19.0 [<15] (7/7/23 BUN 45, creat 2.6, sdma 12.9 WBC 16.9 [3.5-16.0], neut 13182 [2500-8500] - increasing USG 1.029, pH 6.5, protein 3+, blood 3+, RBC >50, calcium oxalate monohydrate crystals 2-3, UP:C 1.0 [<0.5] started clavamox,

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 a moderate to large amount of echogenic non-shadowing debris, which could be partially consistent with incidental suspended lipid in a cat, likely 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 or cystoliths are observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Kidneys are bilaterally irregular and diffusely echogenic with decreased corticomedullary distinction and poor visualization of internal architecture. There is no pyelectasia observed. The kidneys are normal in size, the left measuring 3.95 cm and the right measuring 4.06 cm. Punctate non-obstructive nephroliths are noted bilaterally.

Adrenal Glands

The adrenal glands are unable to be well visualized in these images.

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.

The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

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.

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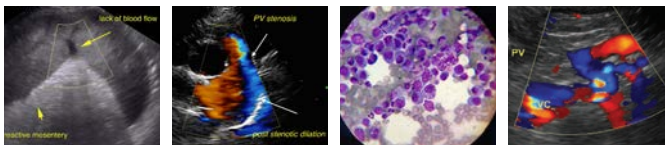

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The visible small intestine demonstrates areas of thick muscularis layer relative to mucosa (disruption of the normal 1:3 muscularis:mucosa ratio). Small intestinal submucosa is slightly irregular, thick and hyperechoic, without evident loss of layering 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

Pancreas is prominent (enlarged) in size, hypoechoic to surrounding tissue and has a mildly irregular undulating contour. Parenchyma is coarse with mixed echogenic remodeling noted.

Free Abdomen

A scant/trace amount of free anechoic fluid is noted adjacent to the left kidney.

There is no apparent lymphadenopathy noted in these images.

ULTRASONOGRAPHIC FINDINGS

- Chronic Kidney Disease with punctate non-obstructive nephrolithiasis – This appearance of the kidneys is consistent with chronic kidney disease such as chronic glomerular or interstitial nephritis, chronic pyelonephritis, etc. **There may be an acute on chronic process that could help explain the trace free fluid around the left kidney.
- Urinary bladder debris
- 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.
- Low-grade smoldering chronic pancreatitis cannot be ruled out and should be suspected in the face of appropriate clinical signs.

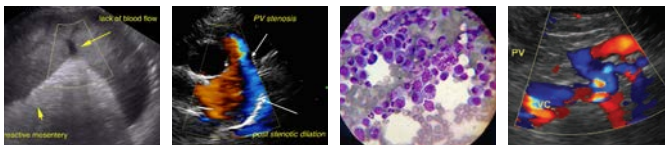
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A week to 10 days following discontinuation of this patient's current course of antibiotics, recheck a urinalysis and, if indicated based on urinalysis results, urine culture. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

A blood pressure is also recommended if not recently evaluated.

Pending results of that recheck, next steps may be implementing medical therapy for protein losing nephropathy if still appropriate in the form of fatty acids and ACE inhibitors, and ideally a renal diet, although reportedly this patient doesn't care for a renal diet.

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).



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Other options could 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.

Part of this patient's GI upset, however, could be related to chronic pancreatic and/or infiltrative bowel disease. Therefore, additional considerations could include:

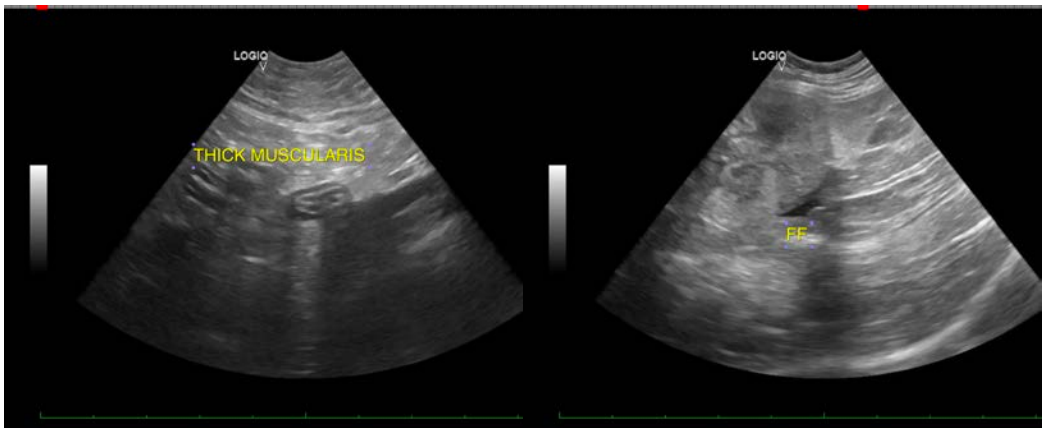
A gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.

Ideally, biopsies of the GI tract, being sure to include ileum if possible, are recommended to definitively diagnose and therefore manage the infiltrative bowel disease.

If biopsies cannot be obtained, empirical therapies could include a probiotic (if diarrhea is present, such as visbiome or proviable), empirical deworming with a 5-day course of Panacur and, if tolerated, a transition in diet, based on trial-and-error response, beginning with a hydrolyzed protein diet. Some patients respond to one brand/version of a hydrolyzed protein diet better than another brand, so several trials may be required.

Additional considerations could include cobalamin supplementation (unless cobalamin level is evaluated and supplementation is not warranted) and prednisolone (if not contraindicated based on patient contraindications, co-morbidities, etc.).

In the meantime, while completing workup, waiting for results, etc., supportive/symptomatic medical management of gastrointestinal signs is recommended in the form of antiemetics to address any subclinical nausea, gastroprotectants in case of possible gastritis secondary to the chronic kidney disease, and an appetite stimulant.



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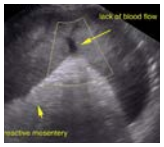
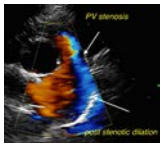
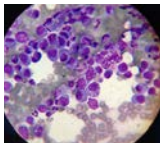
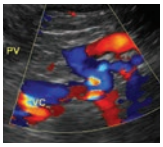

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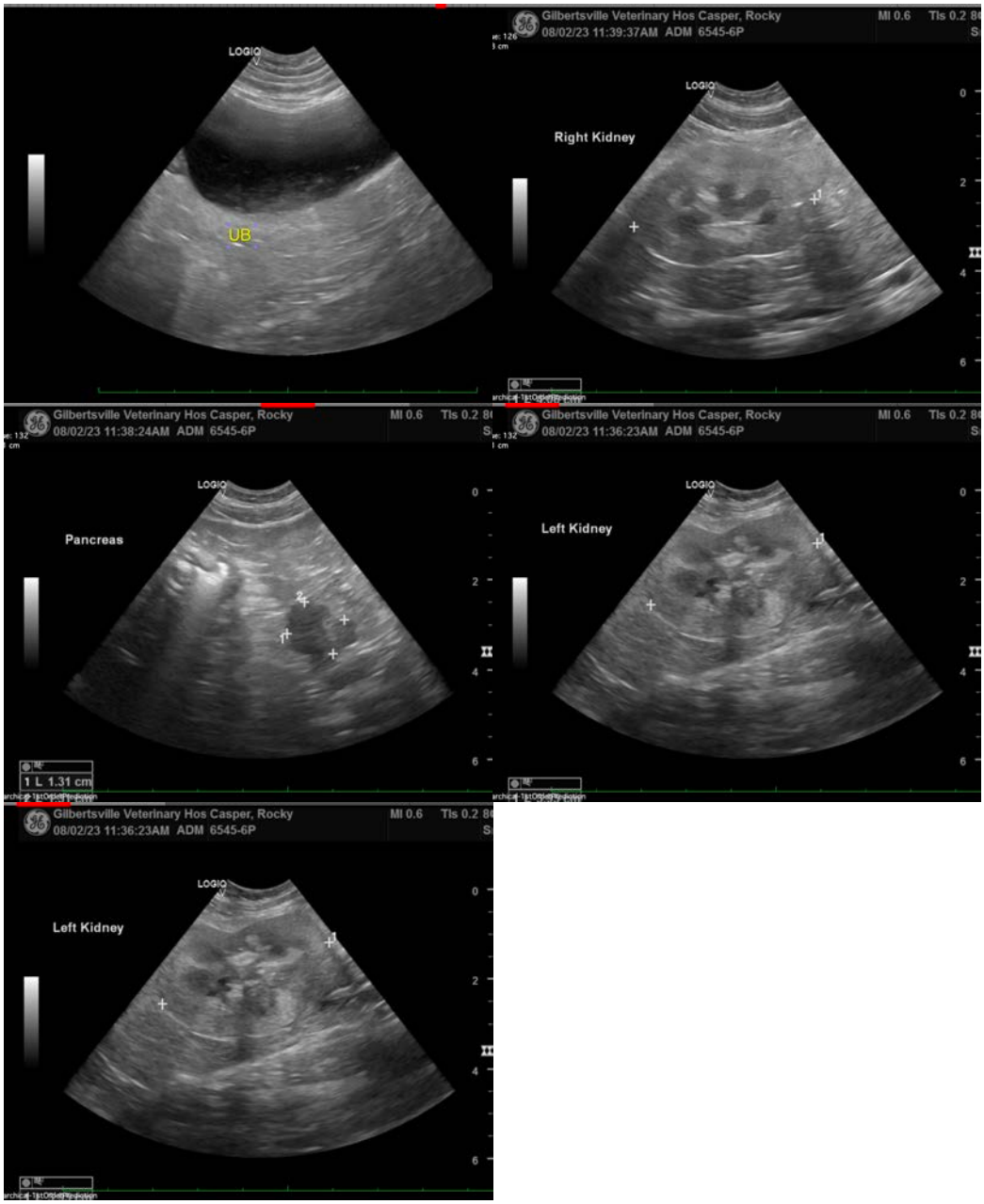

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM
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