



PATIENT PRESENTING CLINICAL SIGNS

PATIENT Coal Reed Presented for lethargy. Dx with diabetes and pyelonephritis yesterday. Currently hospitalized. Urine culture pending.

SPECIES

Feline

Abnormal PE/Chem/CBC/UA Results: Marked elevation in total protein at 101 with globulins elevated and low normal albumin. Hyperglycemia, azotemia, marked neutrophilia and monocytosis.

BREED

DSH

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

SEX

Neutered Male

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.

AGE

8 Years

Kidneys are bilaterally uniformly enlarged/swollen with an overall hyperechoic echogenicity and slight loss of corticomedullary definition. Normal smooth peripheral margination and shape are maintained. The renal pelvis are dilated with anechoic fluid and hyperechoic thickened pelvic fat. No overt evidence of neoplasia or mineral is observed. The perinephric area is enhanced by hyperechoic fat and mesentery. The pyelectasia in the left kidney measures 0.40 cm in the transverse view. The left kidney measures 4.86 cm. The pyelectasia in the right kidney is trace. The right kidney measures 4.7 cm.

WEIGHT

5 kg

INTERPRETED BY

Beth Johnson, DVM
DACVIM

Adrenal Glands

The area of the right adrenal gland is examined without evident adrenal pathology.

IMAGING PERFORMED BY

Dr. Sarah Barthelemy

The left adrenal gland is normal in size (0.41 cm), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

Spleen

Spleen is subjectively large in size with normal smooth margins. Parenchyma is normal in echogenicity with a coarse/heterogenous echotexture. No focal nodules or masses are observed. Splenic vasculature appears normal.

HOSPITAL NAME

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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.

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



PATIENT *Gastrointestinal*

Coal Reed 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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The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

BREED

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

SEX

Neutered Male

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. Pancreatic duct dilation is noted.

AGE

8 Years

Free Abdomen

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

WEIGHT

5 kg

There is no apparent lymphadenopathy noted in these images.

INTERPRETED BY

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ULTRASONOGRAPHIC FINDINGS

- **Pyelonephritis** – These changes are most consistent with chronic pyelonephritis. Chronic scarring and fibrosis and/or chronic nephrolith passage can also result in these pelvic dilation changes. Early infiltrative disease cannot be ruled out but is considered less likely.
- **Coarse splenomegaly** – can be associated with congestion caused by sedation (if sedated) but can also be associated with diffuse infiltrative disease. Both benign conditions such as extramedullary hematopoiesis, lymphoid hyperplasia, amyloidosis (leave amyloidosis out if canine) as well as infiltrative neoplastic diseases such as round cell neoplasia should be considered.
- **Pancreatic age-related remodeling/chronic pancreatitis** – Mild irregularities are consistent with benign age-related change. Low-grade smoldering chronic pancreatitis cannot be ruled out and should be suspected in the face of appropriate clinical signs.
- **Mild gallbladder debris** - 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.

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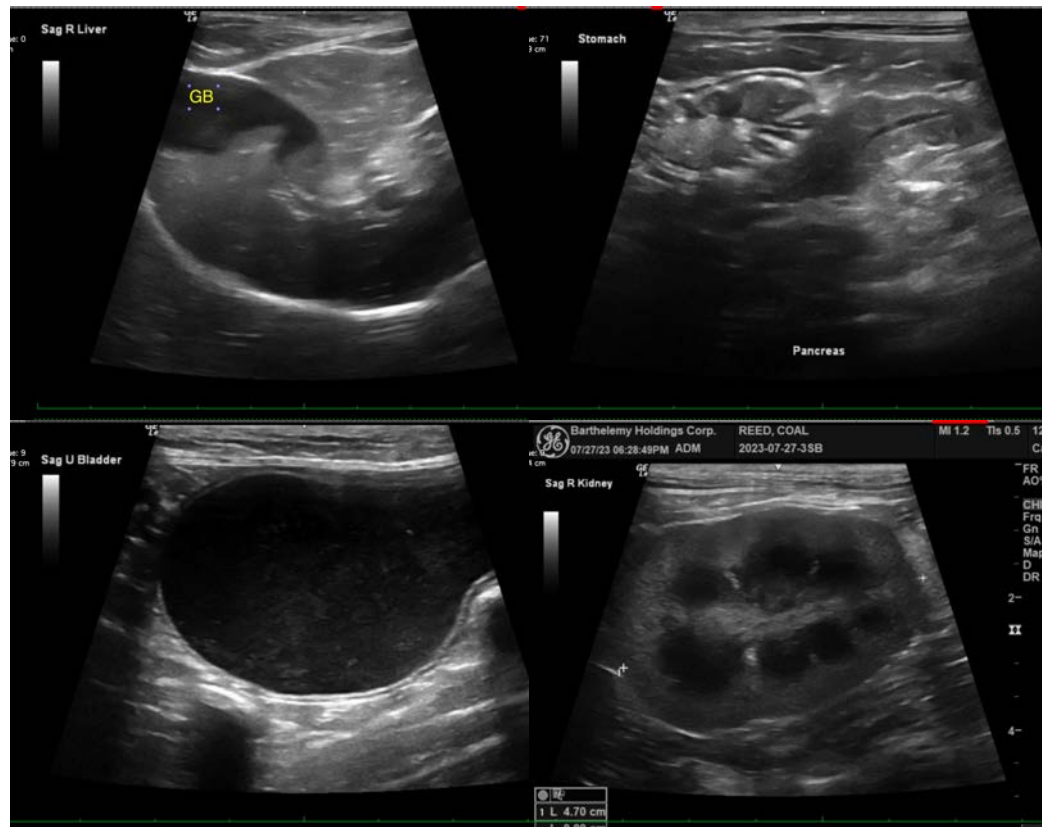
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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

As is reportedly already pending, a urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

The top differential for this patient's acute illness is likely the newly diagnosed diabetes and concurrent pyelonephritis. However, given the hyperglobulinemia, further evaluation for round cell neoplasia such as lymphoma versus other could be considered. Therefore, a fine needle aspirate of the spleen could be considered if patient's coagulation status is appropriate.

In the meantime, medical management of suspected pyelonephritis with fluid therapy, broad-spectrum antibiotics, as well as medical management of any diagnosed diabetes and supportive care of clinical signs in the form of antiemetics, an appetite stimulant, if necessary, etc. is recommended with monitoring for improvement versus progression, etc.





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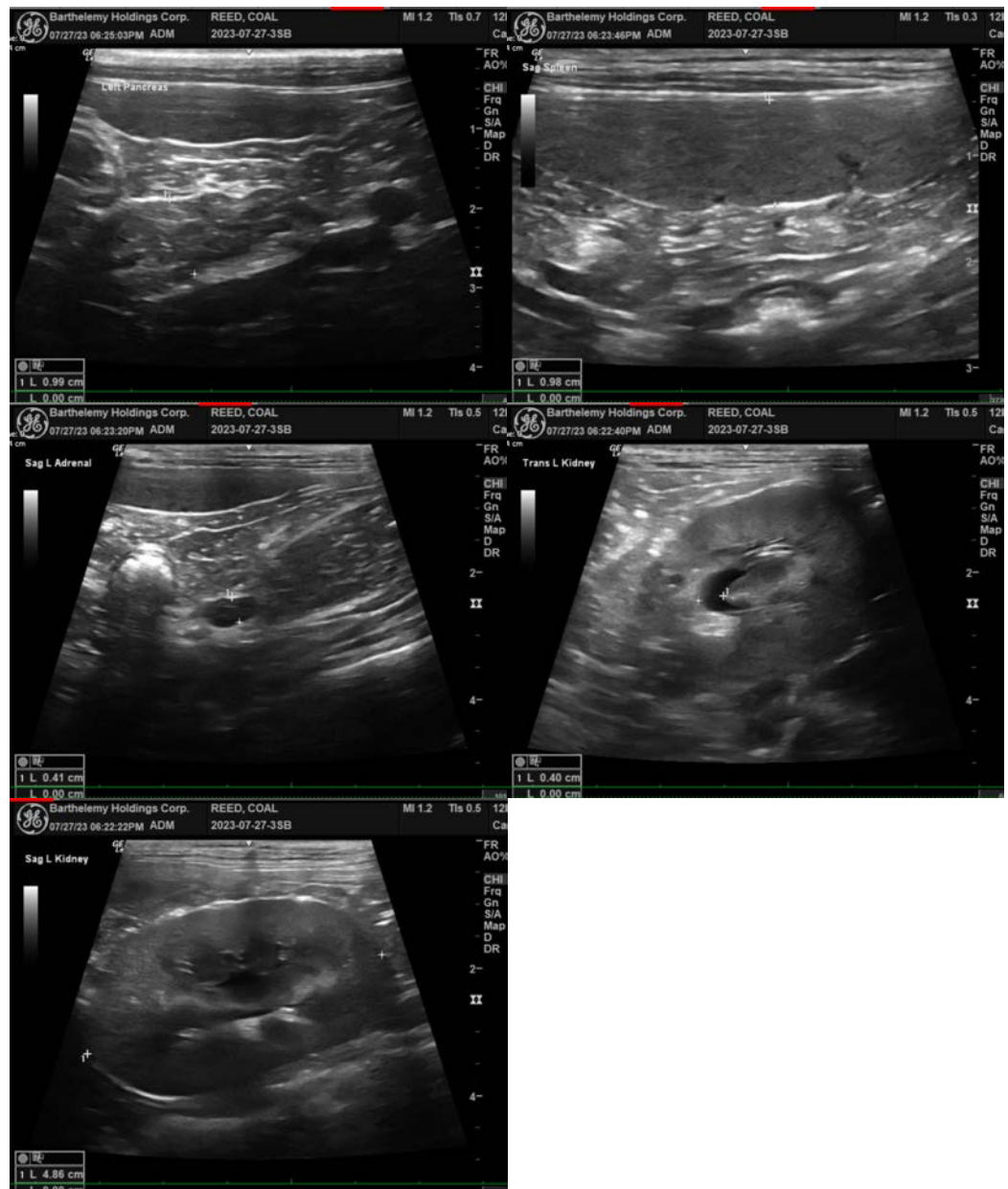
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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