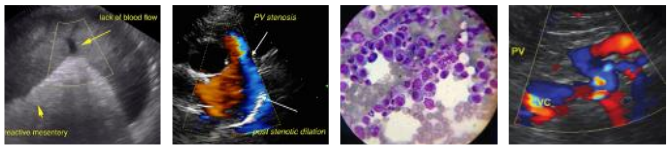
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Cami Schmidt

SPECIES
Canine

BREED
Labrador Retreiver

SEX
FS

AGE
11yr

WEIGHT
37.4kg

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Dr. Stegemoller

HOSPITAL NAME
North Idaho Animal Hospital

REFERRING VET
Dr. Stegemoller

INVOICE
11696

DATE
09/26/2022

PRESENTING CLINICAL SIGNS

History: Presented 9/21 to a colleague for reduced appetite, diarrhea, lethargy, and bloated abdomen. Bloodwork at the time suggested ehrlichiosis, but patient isn't responding to therapy. Recommended ultrasound to look for underlying disease.

Abnormal PE/Chem/CBC/UA Results: Weight loss of 4 pounds since 9/21. BCS of 8/9. Historical CCL injuries, seizures. CBC - RBC 8.3, WBC 6.74, Lym 0.95 Chem - Cre 1.8, BUN 44, Glob 5.0, ALP 1059 (previously 1585 in 5/22) UA - 1.010, 2+ proteinuria, WBC 6/hpf, Sedivue suspects cocci, WBC 3/hpf Current medications -

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 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 uniformly enlarged/swollen (X cm) 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 mineral is observed. The perinephric area is enhanced by hyperechoic fat and mesentery. The left kidney measured 11.4 cm in length. The right kidney measured 12.8 cm in length. In the long axis view of the right kidney in the near field there appears to be a heterogeneous 5 cm x 9 cm nodule/mass disrupting renal architecture however the finding cannot be supported in the transverse view.

Prostate is normal in size, echotexture and echogenicity for a neutered male.

Adrenal Glands

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

Left adrenal gland is normal in size (3.38 cm at cranial pole and 1.4 cm at caudal pole), shape and contour. Corticomedullary structure is unremarkable. There is a hyperechoic nodule in the cranial pole that does not disrupt the capsule. Visible surrounding vasculature appears normal.

Spleen

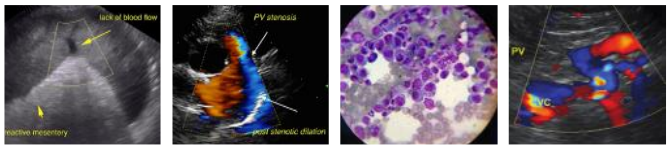
Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). Multifocal well-demarcated hyperechoic homogenous nodules are noted. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged with rounded margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature appears normal.

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.

Gastrointestinal



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The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

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.

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

Pancreas
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.

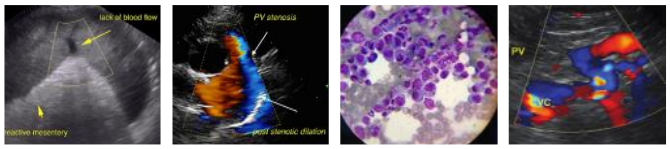
Free Abdomen
There is no evidence of peritoneal effusion. There is no apparent lymphadenopathy.

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.
- The right kidney contains, in the long axis view a focal heterogenous loss of architecture that is concerning for a nodule or a mass which would be concerning for infiltrative neoplasia. However, this finding is not visible in short axis views so therefore just a severe loss of normal architecture secondary to the pyelonephritis as described above is also possible.
- Heterogeneous liver -These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.
- Gallbladder debris- Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs 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.
- Urinary bladder debris
- Hyperechoic splenic nodules – most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, but are considered less likely.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

1. Further diagnostic recommendations include a urine C/S given the bacteriuria and proteinuria. If the culture is negative and urine sediment is clear a UPC is recommended to further quantify the proteinuria. Blood pressure is recommended if not recently evaluated
2. Given the patient's reported bloating and GI upset, 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.
3. A FNA of the right kidney could be considered given the abnormal appearance if patient's coagulation status is appropriate however given the uncertainty for infiltrative disease,



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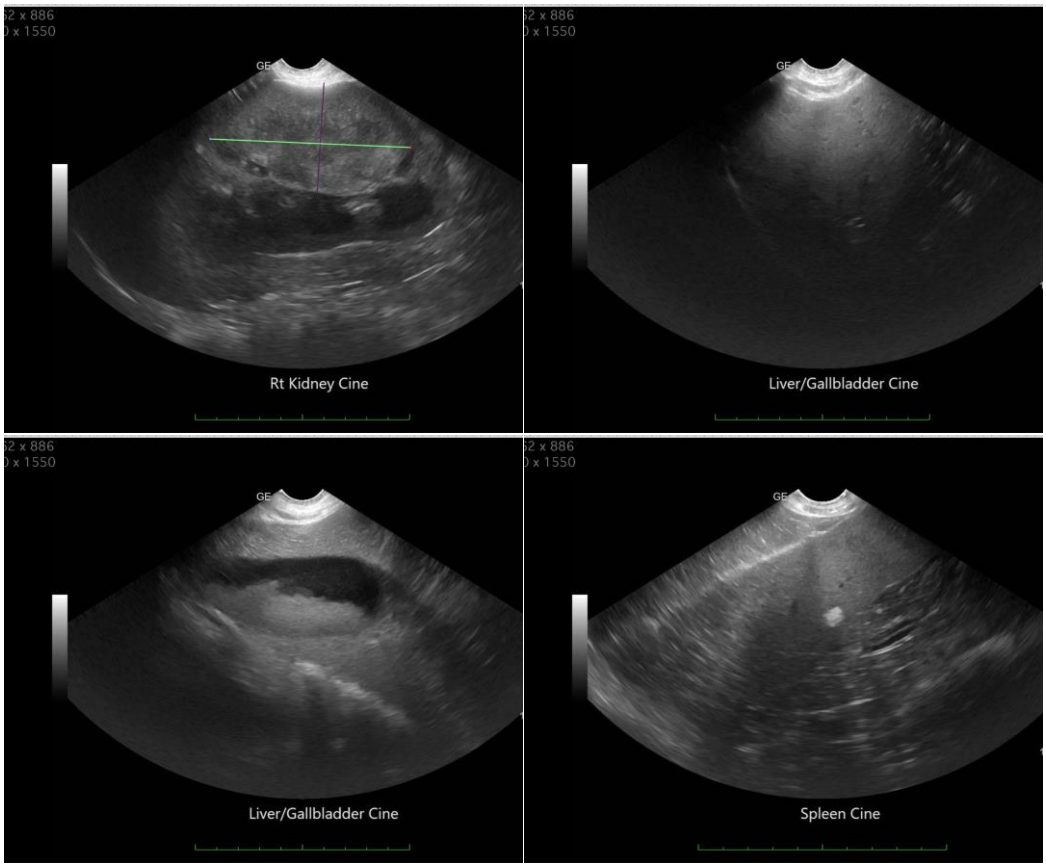
monitoring following treatment of suspected pyelonephritis is an alternative approach prior to aspirating. In the meantime, medical management of the azotemia and suspected pyelonephritis with fluid therapy, antibiotics, BP and proteinuria management if indicated as well as GI support is recommended. Additionally given the reported bloating, empirical deworming with a 5 day course of Panacur is recommended and the addition of a probiotic such a Visbiome or Proviable. If tolerated a bland or hydrolyzed diet could be considered with monitoring of patient's bloating and GI signs.



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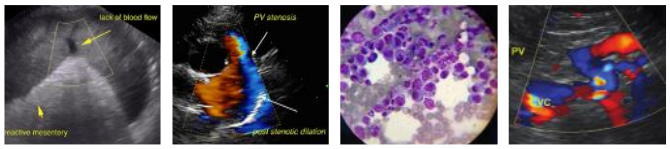

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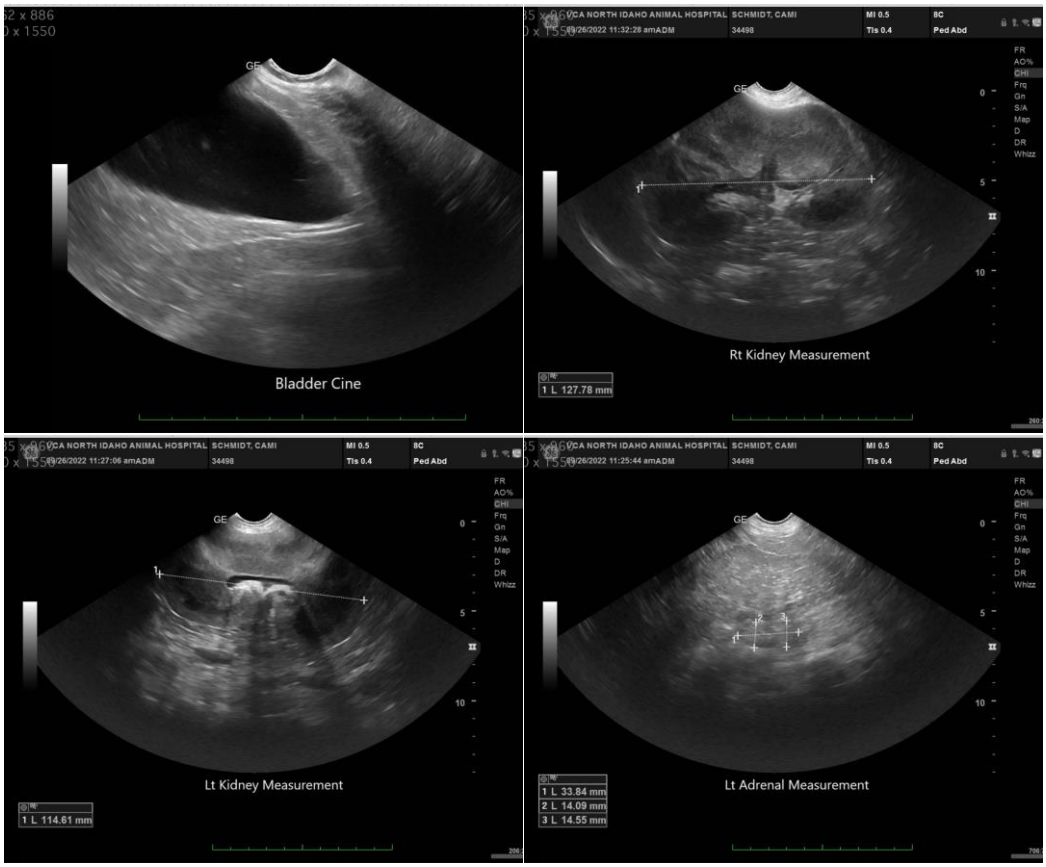

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

Beth.Johnson@SonoPath.com