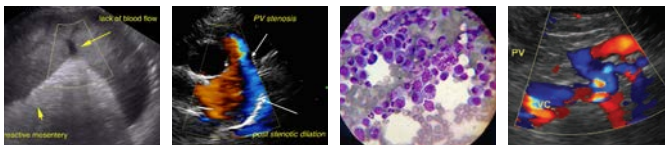
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Nalla Rivera

SPECIES
Canine

BREED
Lab

SEX
Female

AGE
4 Years

WEIGHT
55 Pounds

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

IMAGING PERFORMED BY
Jessica Miller

HOSPITAL NAME
Westwood Regional

REFERRING VET
Dr. Silver

INVOICE
39861

DATE
7/27/22

PRESENTING CLINICAL SIGNS

Elevated liver enzymes
Abnormal PE/Chem/CBC/UA Results: Crea 5.7, BUN 100, phos >16.1, Ca 7.6, Amyl 1892, RBC 3.86, HCT 25.4, Hgb 8.6

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (7.49 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.

The right kidney has a normal shape and size (7.68 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.

Adrenal Glands

The left adrenal gland is normal in size measuring XXcm 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.

The right adrenal gland is normal in size measuring 0.72 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.

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.

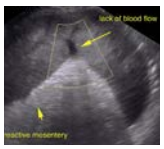
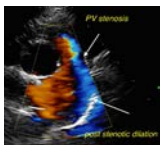
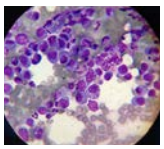
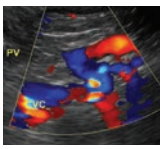
Liver

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

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at an increased thickness of 1.3 cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate

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and there is no impression of reduced peristaltic activity. Most of the thickening appears to involve the mucosal layer. No focal lesions are 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 pancreas is prominent and hypoechoic as compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

ULTRASONOGRAPHIC FINDINGS

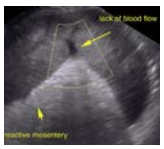
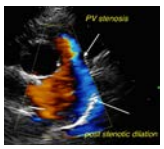
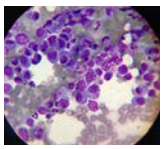
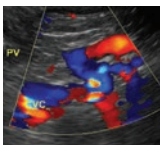
- Decreased corticomedullary distinction in both kidneys – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.
- Hypoechoic, prominent pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Thickened gastric wall – could be consistent with uremic gastropathy. Wall layering appears intact. The mucosal layer is prominent. Other differentials for wall thickening are possible.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is some reduction in corticomedullary distinction in both kidneys, but otherwise they structurally appear relatively normal. There are no stones, significant pyelectasia, or mass lesions observed. Findings could be consistent with chronic renal failure, an acute on chronic episode, or even congenital disease with minimal visual dysplasia. Additionally, toxins, infections, etc. need to be considered. These are my recommendations for a severely azotemia pet.

Kidney changes observed are non-specific-and can be seen with interstitial fibrosis, infection, inflammation/autoimmune, toxicities and neoplastic causes. The cause of the kidney disease cannot be definitively diagnosed by ultrasound alone. Consider:

- Close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc..

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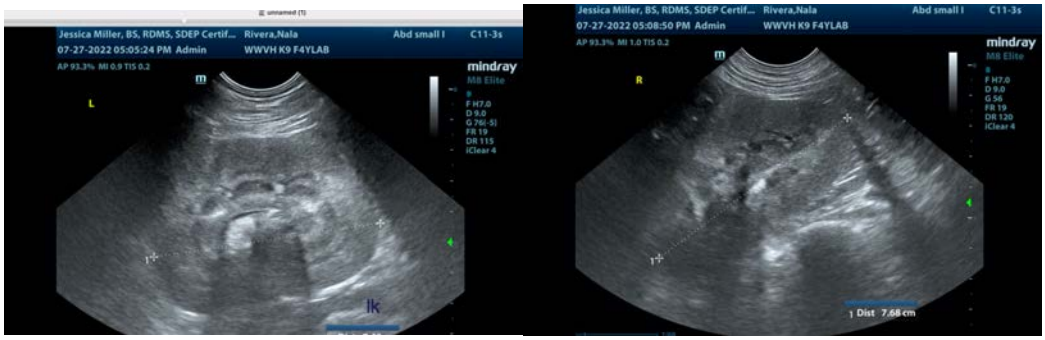
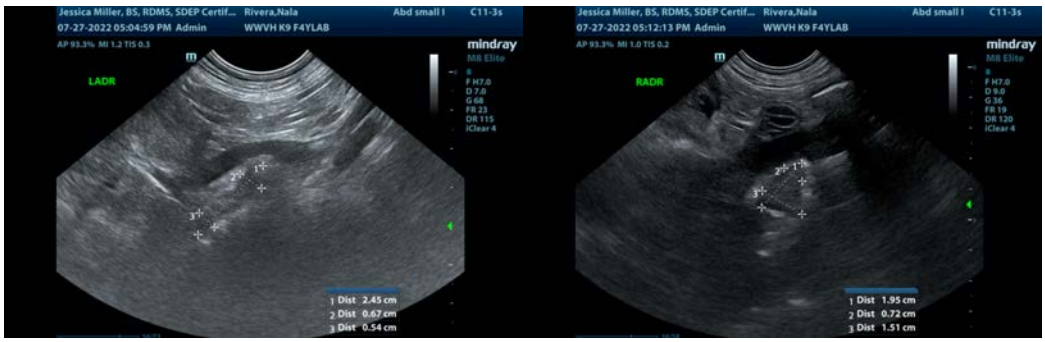
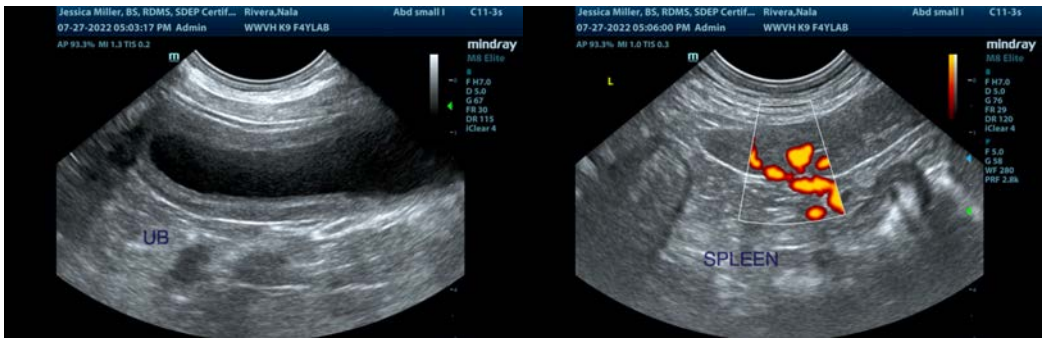
- Urinalysis/culture to look for underlying infection
- Blood pressure evaluation
- Consider an ACTH stimulation test to rule out Addison's disease
- Urine protein:creatinine ratio to look for proteinuria
- PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history
- FNA likely recommended only if other supportive evidence of neoplasia is present (lymphadenomegally, paraneoplastic hypercalcemia etc..)(normal coags, BP, 25g needle)
- Consider diuresis and symptomatic therapy for GI signs, anorexia, antibiotics while awaiting cultures etc..

The gastric wall is significantly thickened. Wall layering appears intact, and the mucosal layer is prominent. This could be consistent with uremic gastropathy and secondary to the renal disease.







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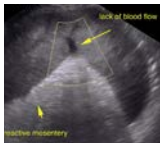
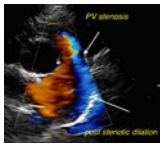
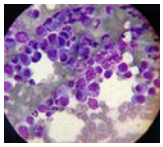
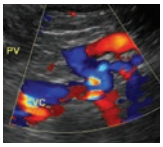

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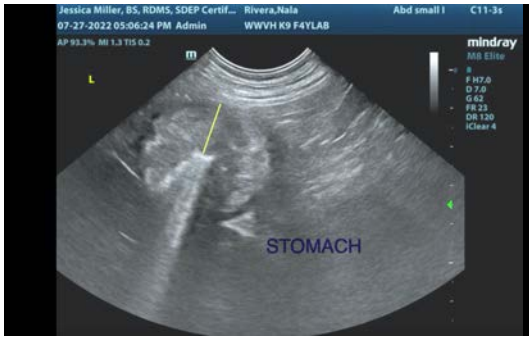

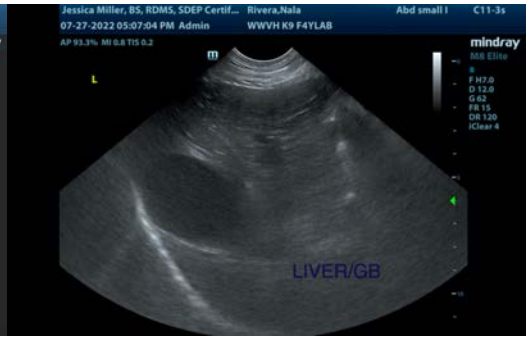

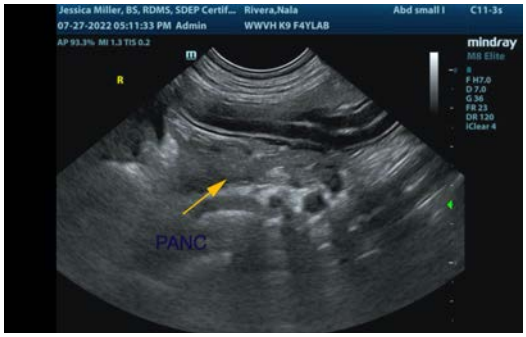

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

kathleen.sennello@sonopath.com