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Clinical Sonography & Telecytology
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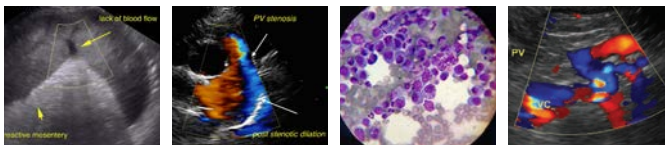


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Selphi Weise

SPECIES
Feline

BREED
DMH

SEX
Spayed Female

AGE
17 Years 8 Months

WEIGHT
7 Pounds

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Dr. Lucas Budden

HOSPITAL NAME
Frontier Vet Hospital

REFERRING VET
Dr. Lucas Budden

INVOICE
39488

DATE
7/13/22

PRESENTING CLINICAL SIGNS

Patient seen 6/28/2022 for weight loss, oral exam, and recheck kidney values. History of CKD and heart murmur. Patient had lost over 2# since last visit in March 2022. Per owner still had good energy and healthy appetite. See BW results below. Last BW before this appt was 3/21/2022 and creat was 3.4. Recommended ultrasound to further assess kidneys due to worsening of kidney values. About 5 days ago patient started to become weaker and appetite decreased. Appetite increased once started on Miratax and Cerenia. See recheck blood work results below and exam from 7/13/2022. Patient also currently on Phosbind.

Abnormal PE/Chem/CBC/UA Results: Exam 7/13/2022 MM pale pink, 8-10% dehydrated, severe dental calculus and gingivitis, grade 4/6 parasternal systolic HM, lost 0.9# since exam on 6/28/2022 (previous weight 7.9#). BCS 3/9. CBC/Chem/UA/T4/UPC 6/28/2022 BUN high 99 Creatinine high 5.1 P high 6.2 Calcium high 11.7 Amylase high 1402 Hematocrit low 25% Platelet high 664 Neutrophils high 10,320 Lymphocytes low at 960 USG 1.96 Clear appearance 1+ protein Quite sediment Reticulocyte count normal UPC high 0.8 CBC/chem 7/13/2022 Lymphocytes low 0.56 Hematocrit low 27.25 Platelet high 711 BUN high greater than 180 Calcium high 13.1 Phosphorus high at 13.7 Creatinine high 6.6 Glucose high 209 Pending ionized calcium and recheck UPC

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

The kidneys are bilaterally small, irregular and diffusely echogenic with decreased corticomedullary distinction and poor visualization of internal architecture. There is no pyelectasia noted and no mineral is observed. Renal pelvis is dilated bilaterally (pyelectasia). No visible obstruction is observed, but cannot be ruled out. The left kidney measures 2.81 cm. The right kidney measured 2.64 cm.

Adrenal Glands

The left adrenal gland is uniformly plump and egg-shaped, hypoechoic in echogenicity with dystrophic mineralization noted. This is most likely a benign age-related change. This change can be caused by chronic stress/disease, so investigation for/management of other disease (chronic kidney disease, hyperthyroidism, etc.) is recommended.

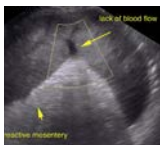
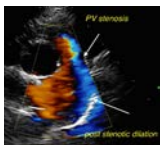
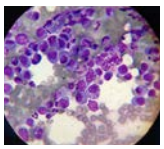
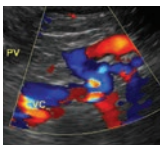
The right adrenal gland is unable to be well visualized in these images.

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). A 0.7 cm discrete, well differentiated, hyperechoic nodule is noted near the head of the spleen. 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. Multifocal small mineral foci are noted. Visible vasculature and biliary tree appear normal without distension or congestion.

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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.

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.

ULTRASONOGRAPHIC FINDINGS

- Chronic Kidney Disease - This appearance of the kidneys is consistent with chronic kidney disease such as chronic glomerular or interstitial nephritis, chronic pyelonephritis, etc.
- Pyelectasia - Differentials for pyelectasia include pyelonephritis, diuresis, congenital malformation or ureteral or lower urinary tract obstruction.
- 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.
- Hyperechoic splenic nodule – differentials include a myelolipoma versus fibrosis or calcification. A granuloma or even infiltrative neoplastic or metastatic disease cannot be ruled out, but is considered less likely.
- Small mineral foci throughout the hepatic parenchyma – differentials include biliary mineral of little to no clinical consequence, or potentially secondary to metastatic calcification secondary to the calcium/phosphorus ratio caused by the chronic kidney disease.

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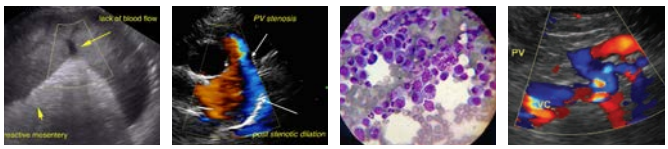

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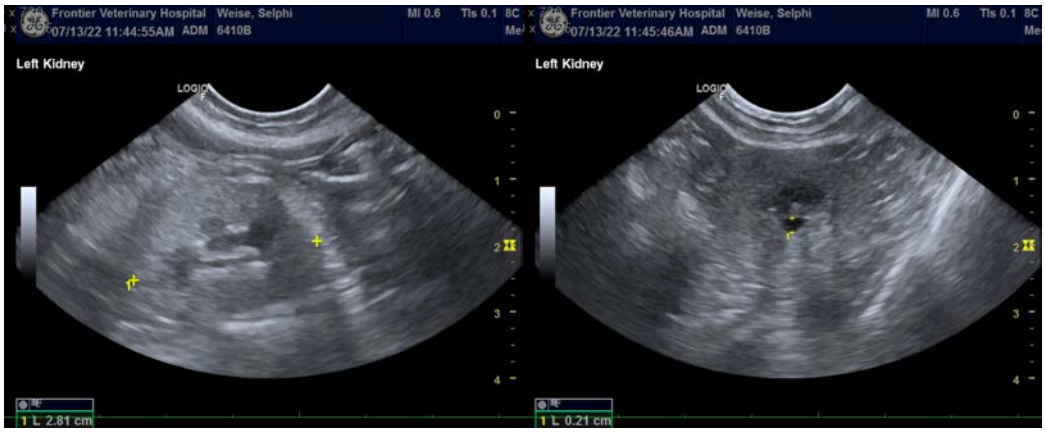
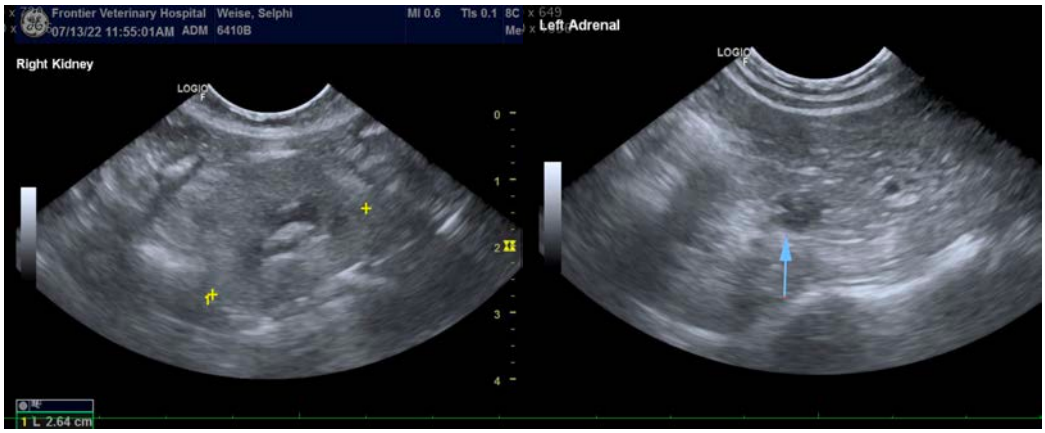
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Recommendations include:

- A blood pressure is recommended if not recently evaluated.
- Urine culture could be considered to rule out an occult urinary tract infection or potential pyelonephritis, resulting in the acute on chronic azotemia.
- Otherwise, continued medical management of the chronic kidney disease with diuresis for the acute crisis, renal diet if not already in place, phosphate binders as are reportedly being administered, in addition to an ACE inhibitor such as Benazepril, given the mild proteinuria, antiemetics, gastroprotectants, appetite stimulants, etc., as needed to help medically manage/support clinical signs.
- Close monitoring of the anemia is recommended so that erythropoietin/darbepoietin can be considered if the anemia progresses.
- A gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory could be considered to see if cobalamin supplementation could help further assist this patient's appetite and/or weight loss, given the evidence of possible inflammatory bowel disease in these images.





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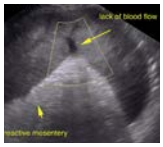
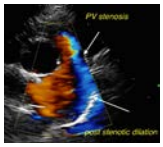
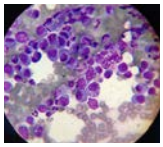
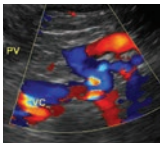

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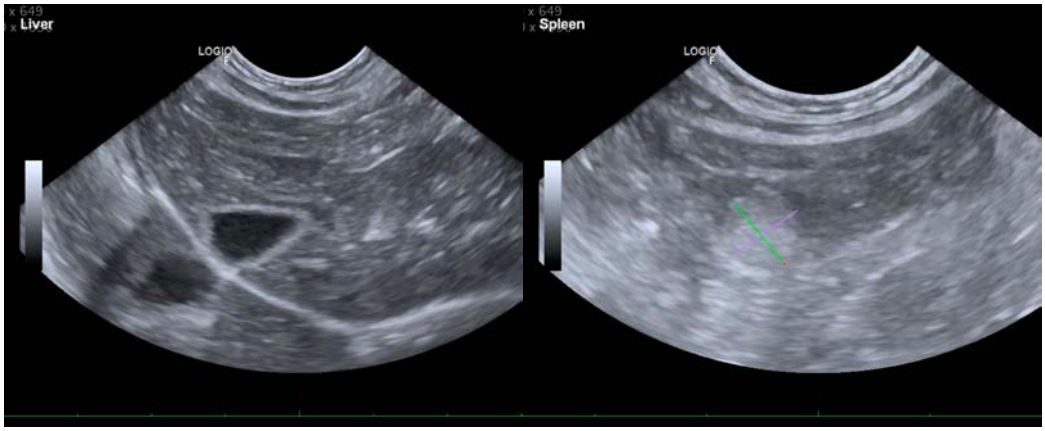

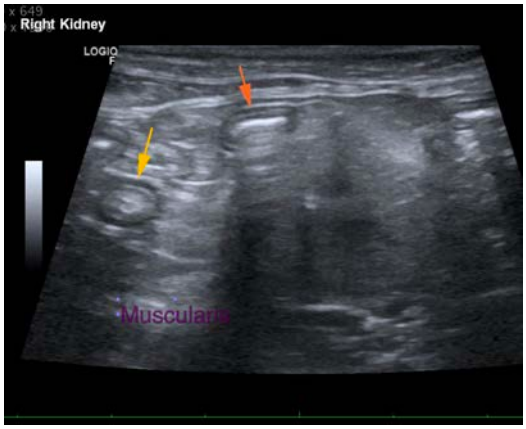

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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