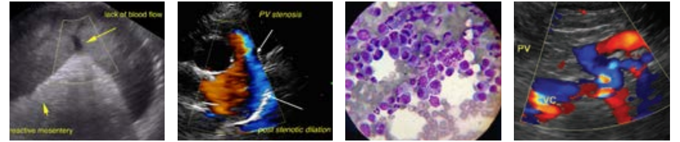
SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™



SonoPath.com

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

PATIENT

Ingrid Peterson

SPECIES

Canine

BREED

Bernese Mtn Dog

SEX

Spayed Female

AGE

3

WEIGHT

102

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Dr. Cohen

HOSPITAL NAME

Willamette VH

REFERRING VET

Dr. Cohen

INVOICE

46173

DATE

3/26/23

PRESENTING CLINICAL SIGNS

Presented for hyporexia, lethargy, febrile, leukocytosis 7-9d duration. Seen at rdvm on 3/16 for leth, reluctance to rise, leukocytosis on BW, negative 4DX snap, and started on doxy, cerenia, mupiricin ointment on large hot spot LH leg. Pt had bilateral diffuse lymphadenopathy, febrile on exam, difficult to rise.

Abnormal PE/Chem/CBC/UA Results: CBC: Hct 44.3, WBC 33.55, Neut 28.91, lymph 2.03, mono 1.79, Plt 150 Chem 10: Crea 1.5, BUN 23, Glob 4.2, ALT 57, ALP 311 Chem 17- Ca 14.5 (moderate hypercalcemia), Glob 4.8 (hyperglobulinemia), ALP 320, normal Tbili EPOC: Ca 1.82, Crea 1.54, K 3.9, Na 144, LAC 2.0, BUN 22_ 3 view chest radiographs: normal cardiac silhouette, no evidence of pleural, pericardial, or pulmonary effusion. No overt evidence of metastasis FNA of lymph node (prescapular and axillary)--> sent to antech UA (cystocentesis)- dark yelow, slightly cloudy urine. USG 1.020, pH 7.0, urine protein 500 mg/dL, glucose 50 mg/dL, ketones 15 mg/dL blood/hgb 250 ery/uL, bilirubin 1 mg/dL, urobilogen 1 mg/dL, WBC <1/hpf, RBC 2/hpf, suspected presence of rods, cocci. suspected presence Started tx with SCF, enro, entyce, fortiflora Ddx: pyelonephritis, hepatobiliary disease, neoplasia, immune-mediated (IMPA), other

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 right kidney is normal in size (7.65 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present.

The left kidney is normal in size (7.44 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present.

Adrenal Glands

The right adrenal gland is normal in size (0.72 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The cranial pole is unable to be fully visualized in these images.

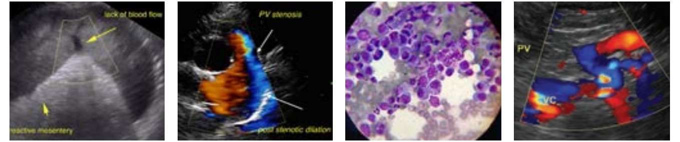
The area of the left adrenal gland is examined without evident adrenal pathology.

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.



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Gallbladder is moderately distended with anechoic bile as well as mild 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

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 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

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.

There is no evidence of heart base or pericardial pathology noted in these images at this time. If cardiac function evaluation is desired a full echocardiogram is recommended.

ULTRASONOGRAPHIC FINDINGS

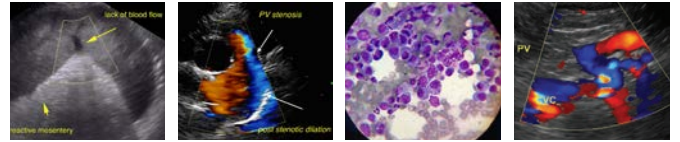
- **Bilateral medullary rim sign -** This finding is of unknown clinical significance and can be a normal variant, often idiopathic. Medullary rim sign can be present with renal disease including FIP, lymphoma, hypercalcemic nephropathy, Leptospirosis, tubular disease, other and should be interpreted in combination with other more specific indications of kidney disease such as isosthenuria, proteinuria, azotemia, etc. This is a common incidental finding in patients with diabetes mellitus.

- **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.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given this patient's reported hypercalcemia, hyperglobulinemia, and lymphadenopathy, infiltrative neoplasia such as lymphoma is a differential, as is infectious disease (specifically granulomatous infectious disease) resulting in hypercalcemia.

Therefore, initial recommendations include (as is reportedly already pending) cytology from fine needle aspirates of the enlarged peripheral lymph nodes. Additionally, a malignancy panel to include PTH, PTHrP, and ionized calcium is recommended.



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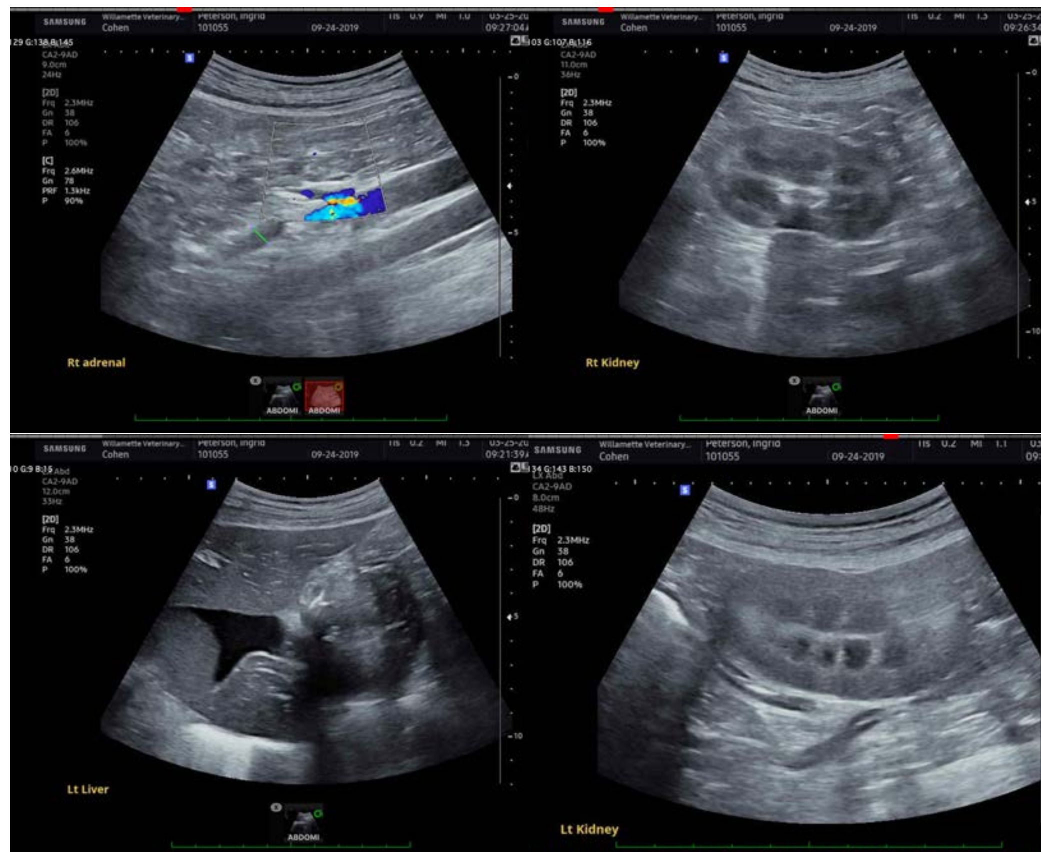
Additionally, there is some concern for concurrent kidney disease, given this patient's dilute urine, proteinuria, and azotemia. Testing for Leptospirosis is srecommended. A urine culture is recommended if sterile urine prior to receiving antibiotics is available. If not, then a recheck urinalysis +/- urine culture at that time is recommended a week to 10 days after finishing antibiotics. If proteinuria is still present in a quiet sediment, then a urine protein to creatinine ratio is recommended to further quantify the proteinuria.

Additionally, if not recently evaluated, blood pressure is recommended.

If a diagnosis is not obtained to explain the hypercalcemia (either lymphoma, infectious disease versus other), then a baseline cortisol is recommended. If baseline cortisol is less than 2, a full ACTH stimulation test is recommended to rule out hypoadrenocorticism.



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