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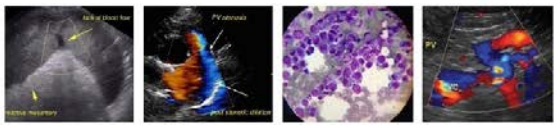

THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT

Simba Long

SPECIES

Canine

BREED

German Shepherd

SEX

Spayed Female

AGE

7 Years

WEIGHT

46 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Reschny

HOSPITAL NAME

Oxford County VC

REFERRING VET

Dr. Bowcroft

INVOICE

33453

DATE

12/15/21

PRESENTING CLINICAL SIGNS

PUPD, leaking urine currently on proin
Abnormal PE/Chem/CBC/UA Results: mild increase in RBC 8.8 (N: 5.4-8.7) platelets were clumped mild increase in SDMA 15 (N:0-14) low S.G 1.010, with v. high pH, no bacteria, mild WBC/RBC (free catch sample mid day. free T4 is normal,

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 right kidney has a normal shape and size (6.83 cm cm). Overall echogenicity is normal with adequate 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 left kidney has a normal shape and size (7.32 cm). Overall echogenicity is normal with adequate 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 0.81 cm. 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 0.82 cm. 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. The spleen echotexture is heterogenous and mottled, 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 heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder 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 appears contains minimal luminal contents. It measures at a normal thickness of XX cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

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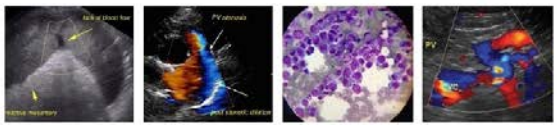

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The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. 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 normal and isoechoic to surrounding 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. No 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

- Subjectively mottled spleen – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. This could also be within normal limits for this patient.

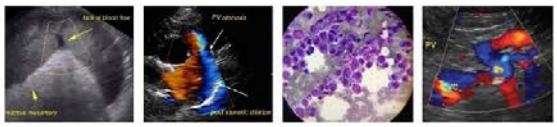
- Subjectively heterogeneous liver – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. If there are no liver enzyme elevations present, this likely represents age related change.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No lesions are visualized associated with the urinary tract or bladder. If the PU/PD is significant, then it is possible that the incontinence is secondary to more urine volume being produced. The bladder does appear large. In these cases, without an obvious cause for PU/PD, I will recommend methodically going through a list of differentials with the more commonly seen differentials being considered first, and then gradually moving down the list. If not already done, start with a full chemistry panel including ionized calcium, urinalysis and culture, and question the owner specifically about any new medications, diet changes, new treat, etc. From there, you can consider other testing such as liver function testing, screening for Leptospirosis, Cushing's testing if clinically appropriate, etc. The list is included below.

PU/PD list: Some of these can be ruled out immediately, as you work your way down the list these differentials are much more rare and difficult to diagnose.

(1) Hyperadrenocorticism (may be a mixed primary PU and PD)
(2) Hypoadrenocorticism (either Addison's or hypocortisolism)
(3) Hypercalcemia
(4) Diabetes Mellitus
(5) Liver Disease (hepatic encephalopathy may be a mixed primary PU and PD)
(6) Pyelonephritis



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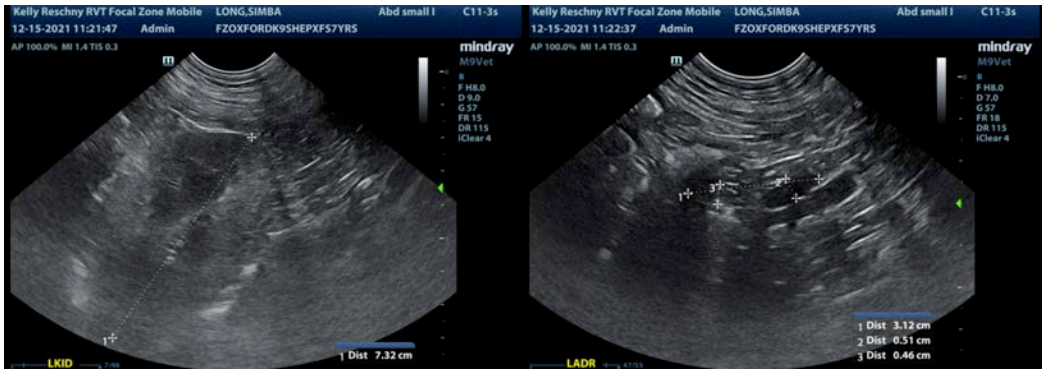
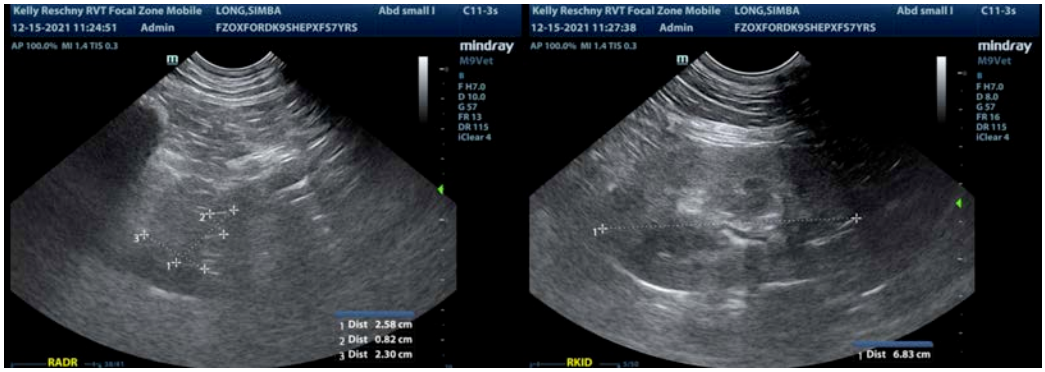
(7) Leptospirosis (can present without azotemia)
(8) Chronic Renal Disease/Renal Failure (can present pre-azotemic, especially in dogs, but expect the BUN & creatinine not to be at the low end of the reference range)
(9) Hyperthyroidism
(10) Hypokalemia
(11) Pyometra (including stump pyometra in spayed dogs)
(12) Renal Tubular Diseases (glycosuria or Fanconi & Fanconi-like syndromes or RTA)
(13) Chronic Partial Urinary Obstruction or Post-Obstructive Diuresis
(14) Iatrogenic Disease due to medications (diuretics, phenobarbital, KBr; diets either high in salt [such as S/D] or very low in protein (such as U/D))
(15) Pheochromocytoma
(16) Polycythemia
(17) Hypertension Acromegaly (expect these patients to have diabetes)
(18) Paraneoplastic Syndromes (particularly splenic hemangiosarcoma?)
(19) Pericardial Effusion
(20) Atypical Cushing's and SARDS Psychogenic Polydipsia (as in a true behavior disorder with a compulsive element)
(21) Primary Non-Medical Polydipsia (aka "I drink a lot because I like it or I engage in activities that promote it, but that doesn't mean I'm sick")
(22) Psychogenic Polydipsia (as in a true behavior disorder with a compulsive element)
(23) Acromegaly (expect these patients to have diabetes)
(24) Primary Nephrogenic Diabetes Insipidus (Congenital Nephrogenic Diabetes Insipidus, other diseases that cause primary PU other than Congenital Diabetes Insipidus would be considered Acquired Nephrogenic Diabetes Insipidus)
(25) Central Diabetes Insipidus

**Keep in mind that diabetes insipidus is a VERY rare disorder and that water deprivation tests are rarely/if ever recommended-if possible consider referral to an internal medicine specialist if reaching that point.





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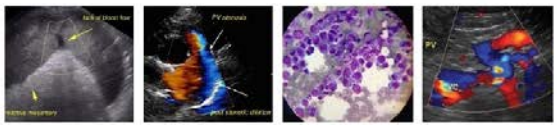

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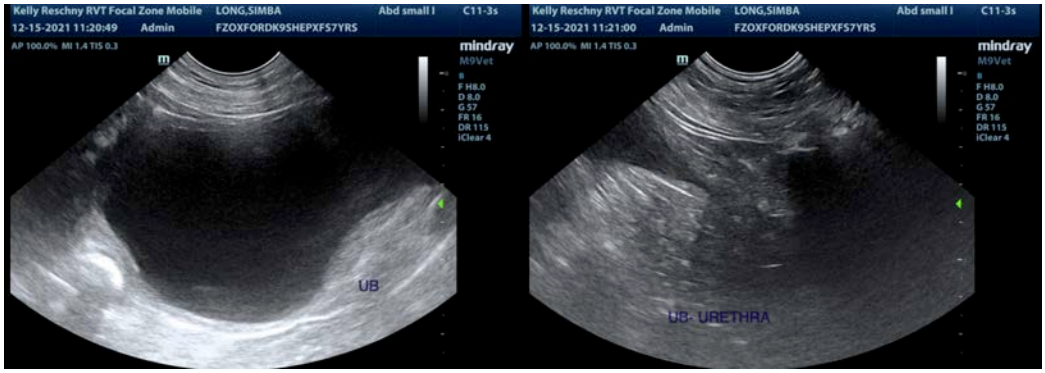

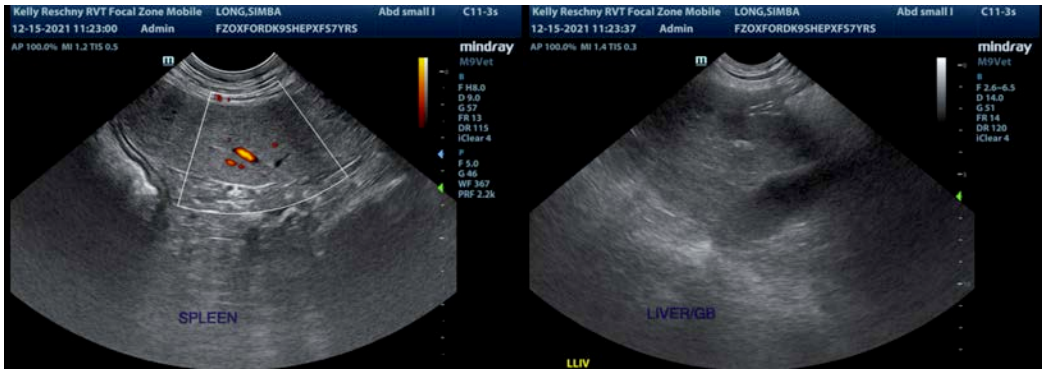

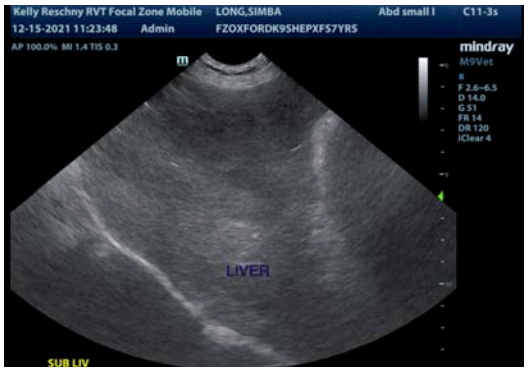

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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