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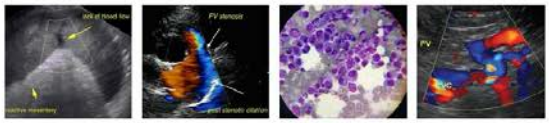

IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

London Miller

SPECIES

Canine

BREED

Poodle

SEX

Spayed Female

AGE

16 Years

WEIGHT

5 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Loetitia Saint-Jacques, RVT

HOSPITAL NAME

Donner Truckee VH

REFERRING VET

Dr. India Vannini

INVOICE

25709

DATE

9/21/21

PRESENTING CLINICAL SIGNS

Light sedation and minimal restraint due to temperament.P atient has been urinating blood for the past couple of weeks. Had been on Clavamox from another vet (Rx'd for the hematuria) for 8 days when she presented to DTVH on 9/18 for worsening of her hematuria. Not on any other meds. E/D wnl. Seems to be stopping to urinate more often. Other vet did not submit a UA or culture prior to dispensing clavamox per O. (Advised O ok to d/c Clavamox on 9/18) Hx 3/6 HM (will forward previous records) Diagnostics: In house CBC: Hct 60.9%, Hgb 20.9 (H), RBC 8.89 (H), Pct 0.5% (H), otherwise WNL In house Chem: Creat 0.7, BUN 43 (H), ALT 151 (H) BPs taken from RH on 9/20: 149/104 (122), 167/102 (121), 148/95 (117) Assessments on 9/18/21: 1) ~2 week history hematuria r/o resistant UTI vs severe crystalluria vs bladder neoplasia vs pyelonephritis vs other 2) Bladder wall abnormality seen on quick u/s: r/o blood clot vs neoplasia (r/o TCC vs other) vs benign changes vs bladder sludge (r/o crystalluria vs cystoliths) 3) Grade 4-5/6 systolic HM r/o progressive endocardiosis +/- Tricuspid regurg r/o compensated r/o requiring cardiac meds 4) Elevated BUN r/o pre-renal (dehydration) vs renal (unlikely given Creat WNL) vs extra renal (muscle catabolism or recent protein meal) 5) Elevated ALT (mild) r/o liver disease (r/o vacuolar hepatopathy vs neoplasia less likely) vs hepatocellular damage Owner brought a urine sample to echo/AUS appt on 9/20 which was cloudy dark yellow - owner reports an improvement in hematuria over the weekend. O considering submission of CADET BRAF test this week. Called in Piroxicam 0.3mg/kg PO q24 to compounding pharmacy on 9/20.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with primarily suspended echogenic debris present. There is a large, solid, somewhat irregular, hyperechoic mass effect on the ventral mid body wall of the bladder measuring 1.2 cm x 1.66 cm. There are small irregularities seen along the surface of the bladder wall in other areas. The ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi. There is a small 0.3 cm shadowing structure visualized dorsal to the urinary bladder, which could represent a small mineralization within the very distal ureter. No ureteral dilation appears associated with this structure. Therefore, significance is unclear at this time.

The left kidney has a normal shape and size (2.59 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. Numerous non-obstructive nephroliths are present, varying in size from 0.25-0.1 cm. Mild pyelectasia noted at 0.12 cm. There is no evidence of infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.46 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. Non-obstructive nephroliths are present. A 0.45 cm cortical cyst is also present. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.52 cm 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 0.43 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.

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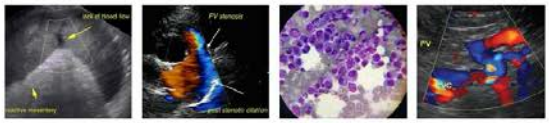

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Spleen

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 heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are numerous ill-defined hyper- and hypoechoic nodules visualized within the hepatic parenchyma, varying in size from 0.25-1.25 cm.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm 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.

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. Jejunum wall measured 0.28 cm. 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

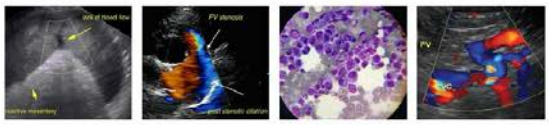
The pancreas is prominent and hypoechoic as compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

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.

PRIMARY FINDINGS

- Large, irregular bladder mass visualized on the ventral wall of the urinary bladder – the findings are most suggestive of a TCC or other primary bladder mass.
- Heterogeneous liver with ill-defined nodules – 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.



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- 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.
- Decreased corticomedullary distinction in both kidneys with non-obstructive nephroliths – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. The hyperechoic mineralized foci observed at the corticomedullary junction of the left/right kidney are consistent with small, non-obstructive nephroliths.

SECONDARY FINDINGS

- Moderate gallbladder debris – The gastric distension and hypomotility could be consistent with focal ileus or a proximal duodenal obstruction.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A large, mid body bladder mass is visualized. This is likely source of the hematuria and pollakiuria reported. At this time, there does not appear to be any evidence of urinary obstruction, as it is not in the area of the trigone to interfere with either outflow or the ureters.

The focal mass in the bladder has the characteristics most consistent with a neoplastic lesion, but polyps and inflammatory lesions can sometimes have a similar appearance. A definitive diagnosis cannot be determined by ultrasound alone.

-Recommend urine evaluation for BRAF mutation seen in patients with transitional cell carcinomas. A positive test is diagnostic, a negative test is inconclusive and will need further diagnostics.

-If negative or non-diagnostic BRAF consider traumatic catheterization to obtain representative cells for cytology, or biopsy sampling via either cystoscopy (if a female) or surgery.

-Patients with bladder pathology should always have urinalysis and culture performed. Ideally cystocentesis should be avoided in patients with suspected bladder masses to try and prevent tracking of tumor cells along the needle path.

-If TCC is confirmed consider referral to/consultation with a board certified. Veterinary oncologist for recommendations regarding treatment options and prognosis.

Additionally, the liver is somewhat heterogeneous. This is a non-specific finding, and likely the source of the ALT elevation visualized. You could consider a fine needle aspirate of the liver to obtain more information.

Both kidneys have chronic changes most consistent with chronic progressive kidney disease and age related change. Caution and close monitoring of renal function is recommended, particularly with the use of NSAIDs. Recommend 3-view thoracic radiographs.

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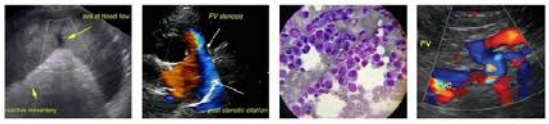

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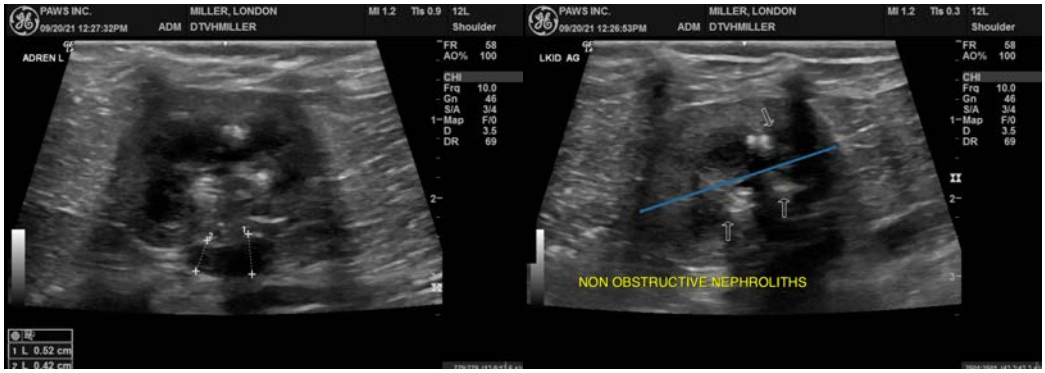

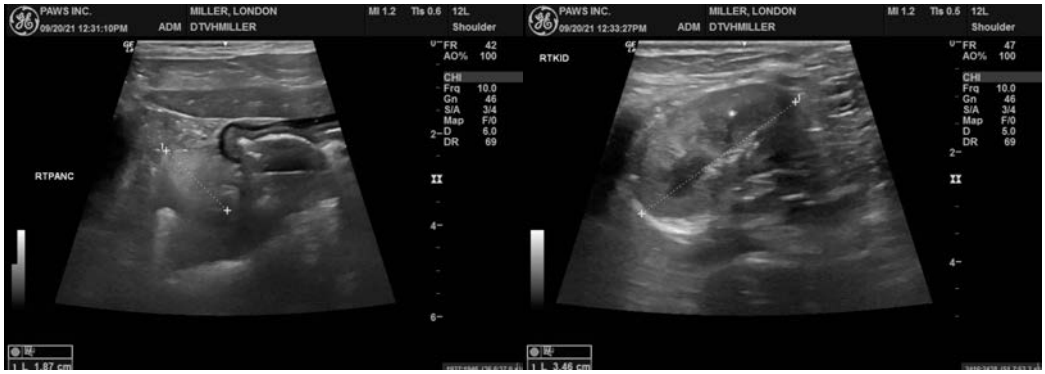

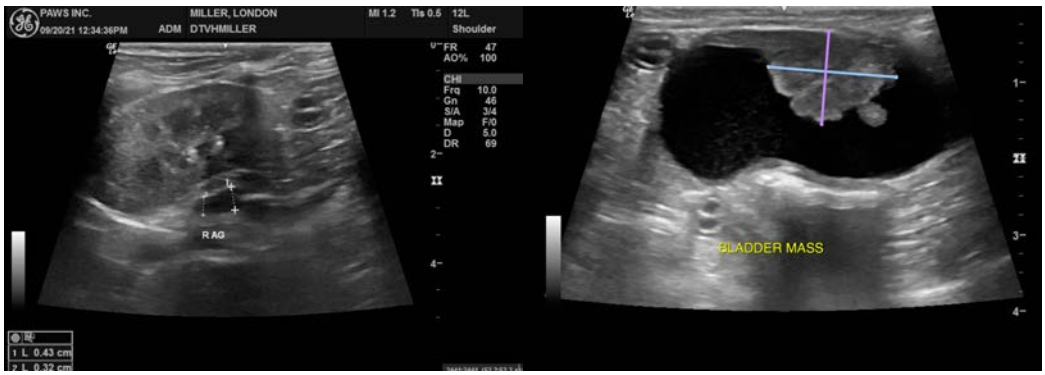

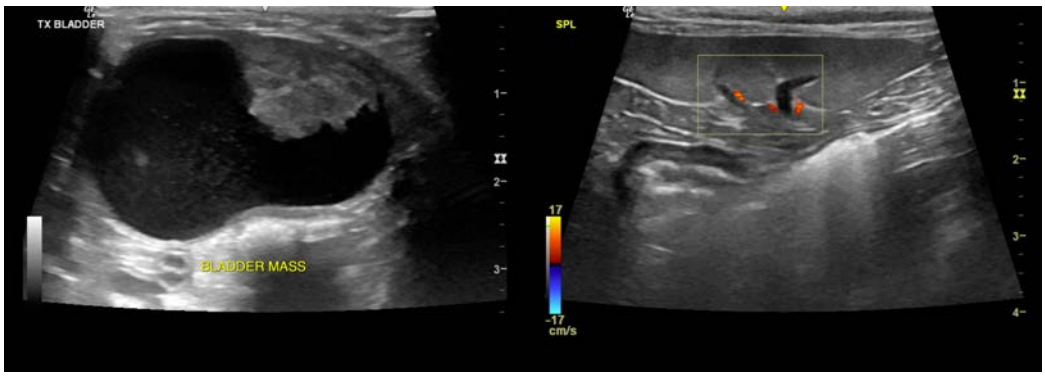

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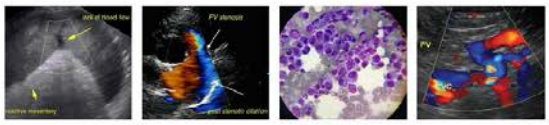

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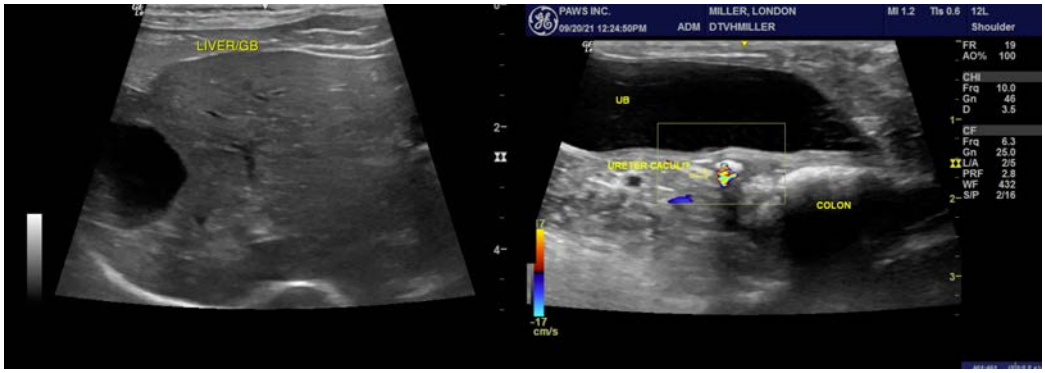

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

kathleen.sennello@sonopath.com