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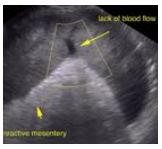

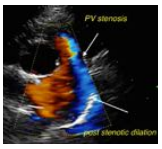

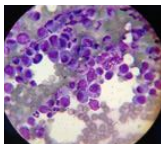
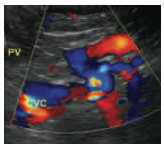

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1-800-838-4268 info@sonopath.com

PATIENT

Owen Johnson

SPECIES

Canine

BREED

Coton De Tulear

SEX

Neutered male

AGE

11 years

WEIGHT

12.2 lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Sorbo

HOSPITAL NAME

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PRESENTING CLINICAL SIGNS

2022: January: Pollakuria, stranguria, hematuria. Treatment with empirical abix and nsaids tried for 1 month with clinical resolution.. February: Culture was done due to clinical recurrence: catheterized sample: low/medium growth of widely sensitive e.coli. March: continued symptoms of variable degree. Abnormal PE/Chem/CBC/UA Results: Normal blood values. Proteinuria, hematuria. UPC 1.7, but sampled by catheterization. Exam otherwise unremarkable, but undiagnosed soft and NOT firm lesion on L anal gland in November - unchanged since, perhaps even slightly smaller today. ~1cm diameter. FNA not attempted.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The bladder wall is thickened and irregular particularly in the ventral region proximal to the cystourethral junction and trigone. In this area the bladder wall thickness is over 1.0 cm and the involved area of bladder wall is over 3.5 cm long. This area of irregular, thickened tissue involving the trigone, cystourethral junction, proximal urethra and ureteral papilla. There was no evidence of obstruction noted based on either urinary bladder distension nor dilated ureters.

The prostate is enlarged and measured 1.7 cm in height in the sagittal view. It is relatively uniform in shape and hypoechoic. No discrete focal lesions are present and the prostatic urethra appears relatively normal.

The left kidney has a normal shape and size (4.0 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 right kidney has a normal shape and size (4.2 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 0.44 cm at the cranial pole, 0.47 cm in the caudal pole. It is observed in its normal position cranial to the left renal artery. It is somewhat irregular in appearance as there is a hyperechoic nodule in the caudal pole measuring 0.41 x 0.37 cm. This nodule is small and does not deviate the shape of the adrenal at all and there is no evidence of vasculature invasion.

The right adrenal gland is normal in size measuring 0.37 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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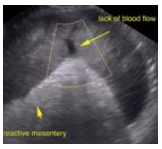

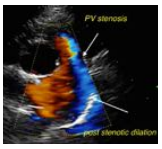

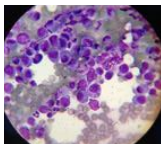
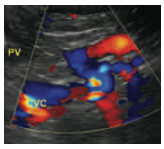

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Spleen

The spleen is subjectively normal in size 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. There is a 2.4 cm hypoechoic, mixed echogenic mass effect in the cranial third of the spleen.

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 gallbladder lumen is moderately distended. The wall of the gallbladder 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 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. 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 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, 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.

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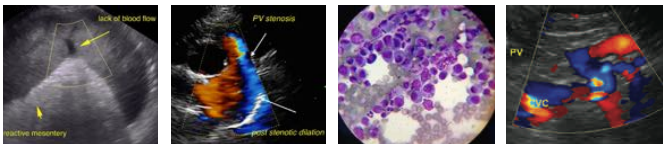

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ULTRASONOGRAPHIC FINDINGS

PRIMARY FINDINGS:

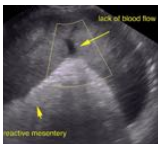
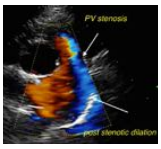
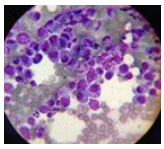
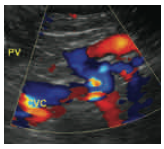
- Focal, irregular tissue in the area of the trigone of the urinary bladder. The findings are most concerning for possible transitional cell carcinoma, but focal cystitis or other abnormalities are possible.
- Hypoechoic, mixed echogenic mass/nodule in the splenic parenchyma. There is a non-cavitated, hypoechoic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.
- Large, heterogenous 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.
- Large, hypoechoic prostate with no focal lesions. Correlate findings with age of neutering. If this patient was neutered late in life it is possible that this is within normal limits. If neutering was prepubertal then this is concerning for possible prostatic neoplasia.
- Hyperechoic foci/nodule on the left adrenal gland. The significance of this is unclear. The lesion is small and does not deform the adrenal gland. I suspect that this is an incidental finding. I cannot rule out early mass lesion.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a large amount of irregular tissue in the urinary bladder. The appearance and location of which is concerning for transitional cell carcinoma.

- 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 there is a hypoechoic nodule/mass lesion on the spleen. This could represent a benign or neoplastic lesion. Options moving forward include the most conservative approach which is just to continue monitoring with ultrasound. An alternative approach is to consider a FNA of the lesion and lastly you can consider a splenectomy with the knowledge that the lesion in the urinary bladder is likely neoplastic as well.

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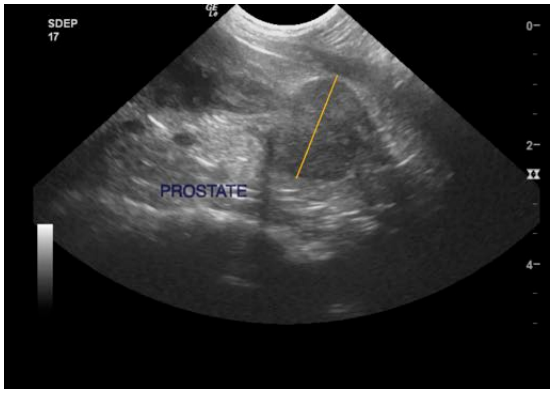
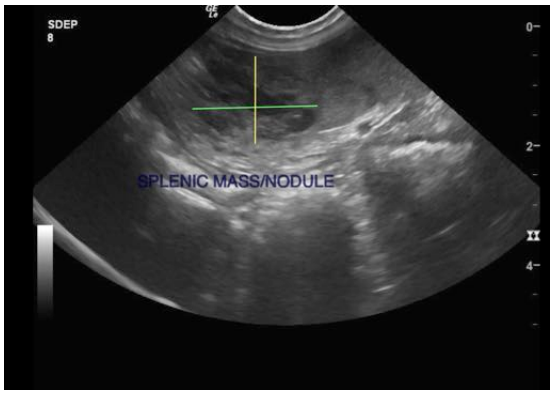
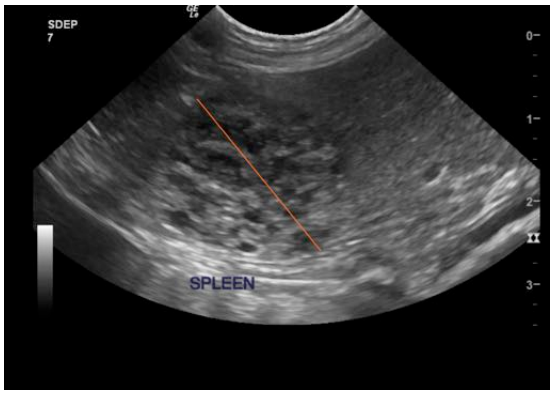
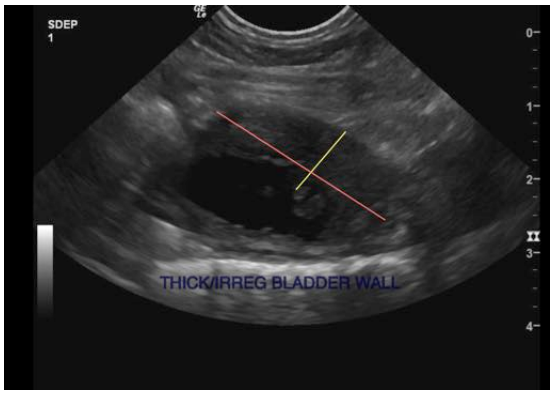
Given the findings in the bladder and spleen I suspect that the nodule in the left adrenal gland is an incidental finding at this time. I recommend blood pressure evaluation. If signs of Cushing's are present you can consider adrenal function testing, but I suspect this is incidental and would initially recommend to continue monitoring to ensure that it is not rapidly changing.

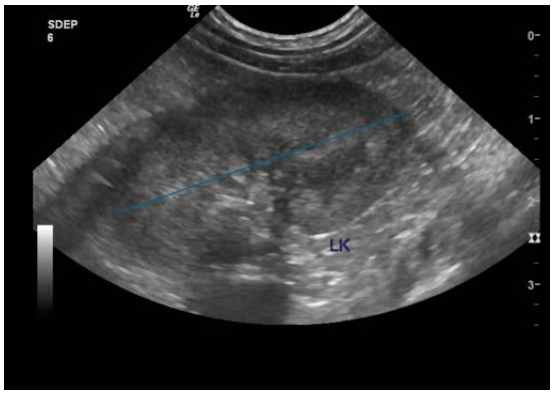
Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.











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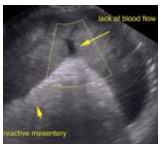
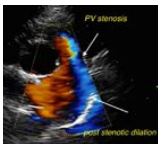
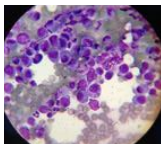
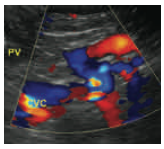

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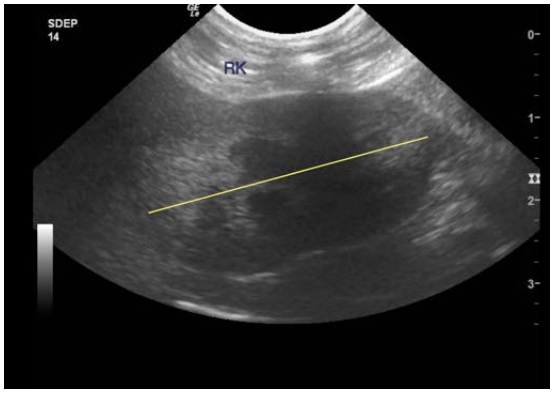

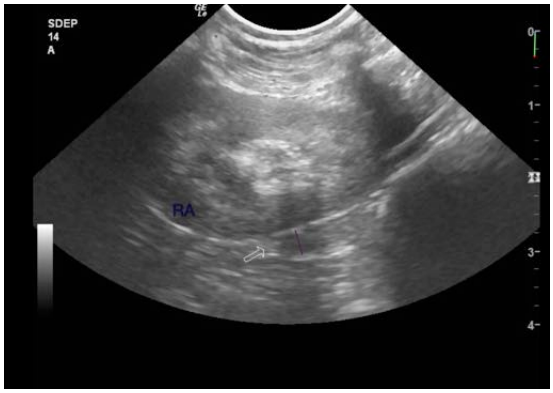

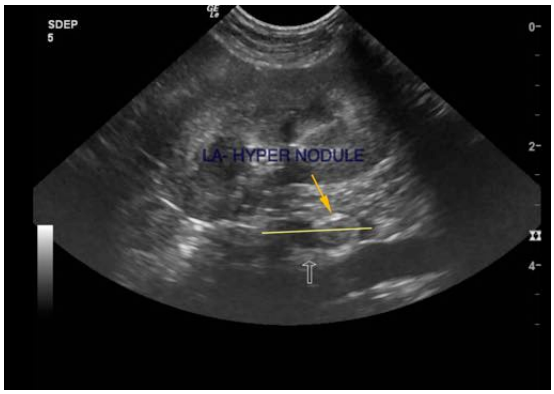

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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