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Clinical Sonography & Telecytology
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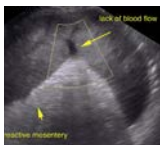
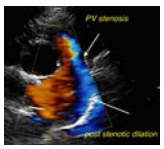
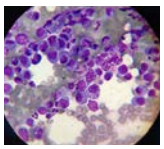
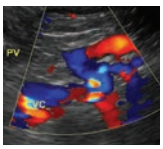

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Harley Pera

SPECIES

Canine

BREED

Mixed

SEX

Spayed Female

AGE

15 Years

WEIGHT

33 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

AH of Roxbury

REFERRING VET

Dr. Elia

INVOICE

45819

DATE

3/9/23

PRESENTING CLINICAL SIGNS

Recheck of bladder
Abnormal PE/Chem/CBC/UA Results: UA: pH 8, WBC 2-3, bili 1+, blood 3+, RBCs >50, struvites 4-10, rods 26-50. Urine prot /creat 3.4; culture proteas mirabilis

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with echogenic urine. The apical portion of the urinary bladder wall appears thickened and irregular, measuring approximately 1.02 cm with occasional polypoid projections. The region of the trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear relatively normal with minimal thickening. No calculi or overt mass lesions. Findings are unchanged from the previous exam on 1/5/23.

The left kidney has a normal shape and size (5.45 cm) with pyelectasia at 0.35 cm. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.95 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal 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 borderline plump measuring 0.86 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/borderline plump measuring 1.05 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.

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 severely heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are occasional hyper- and hypoechoic regions. An ill-defined hypoechoic nodule was visualized measuring 1.68 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.

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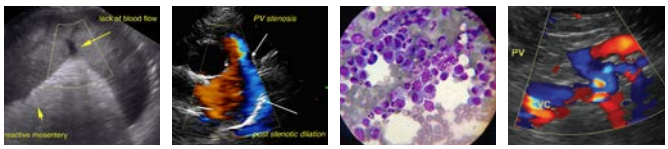

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Gastrointestinal

The stomach contains moderate ingesta. 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 measures 0.35 cm. Duodenum wall measures 0.38 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 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.

ULTRASONOGRAPHIC FINDINGS

- Severely thickened apical region of the urinary bladder with polypoid projections – Findings could be consistent with chronic cystitis, although the persistence of this lesion is concerning for possible underlying neoplasia.
- Borderline plump adrenals – The bilateral adrenomegaly could be consistent with bilateral hyperplasia (e.g., secondary to pituitary-dependent hyperadrenocorticism), bilateral infiltrative neoplasia, inflammatory adrenal disease, other. Correlation with clinical findings is recommended.
- Decreased corticomedullary distinction in both kidneys with left-sided pyelectasia – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. Pyelectasia of the kidney(s)could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.
- Heterogeneous liver with ill-defined hyper- and hypoechoic regions. A hypoechoic nodule is visualized. 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. The hypo- and hyperechoic regions are most likely consistent with benign change, but an underlying neoplastic process cannot be ruled out.
- Moderate gallbladder debris – The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring.

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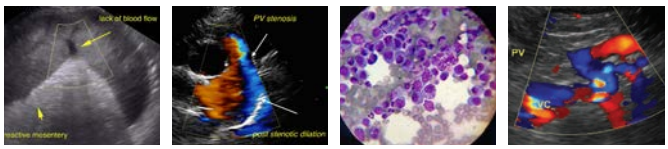

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

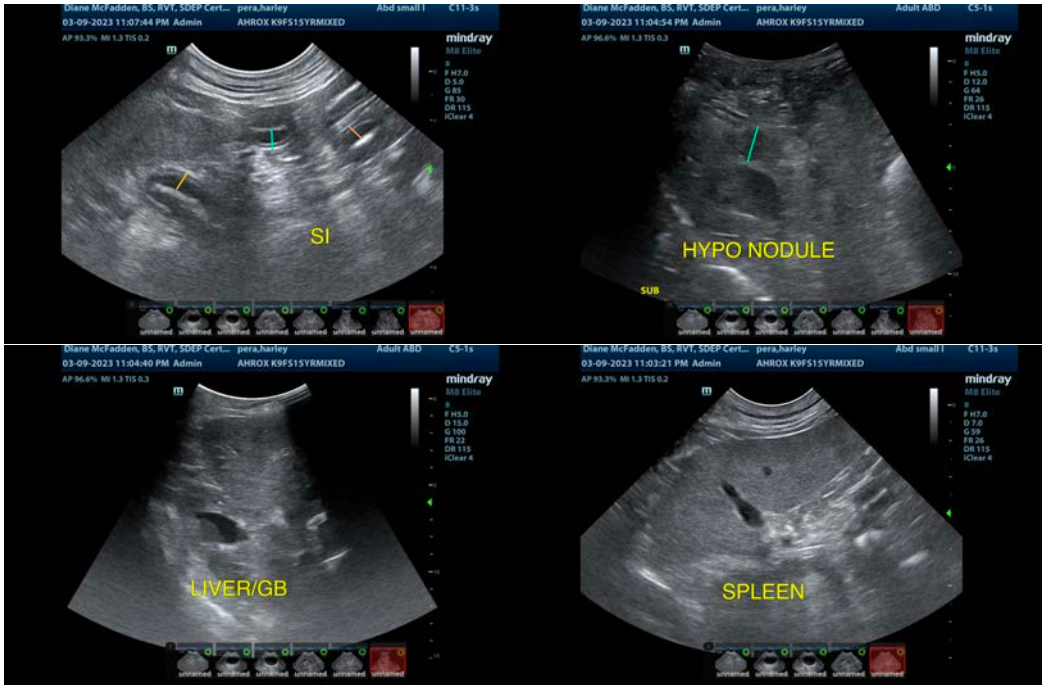
The appearance of the urinary bladder wall is unchanged from the previous exam on 1/5/23. It remains severely thickened with polypoid projections. These changes would be most consistent with chronic cystitis, but given the persistence, an atypical mass effect would need to be considered. Additionally, there is mild bilateral adrenomegaly, which could be associated with pituitary dependent hyperadrenocorticism, which could be predisposing to urinary tract infections, etc.

Both kidneys have changes consistent with aged progressive renal disease as well as left-sided pyelectasia, which could be an indicator of pyelonephritis.

I suspect this is either a severe deep-seated cystitis possibly with concurrent mild immunosuppression, or this could be a neoplastic lesion. At this point I would recommend trying to obtain a sample of bladder wall, ideally via cystoscopy or traumatic catheterization. The culture history is unclear. If this is a recurrent infection, a persistent infection, etc. antibiotic treatment should be strictly based on cultures and sensitivities or there is risk for developing a progressively resistant infection.

Additionally, this patient should be on chronic probiotic therapy, and an exam of the external genitalia, looking for any predisposing anatomic factors such as vulvar folding, urine pooling, etc., should be considered. Ideally, this patient should have a culture performed and treatment with an appropriately sensitive antibiotic for proteus treatment, and a culture should be performed approximately two weeks into therapy to see if the infection has cleared. In this situation with possible pyelonephritis, I would treat for at least 6-8 weeks if the infection is cleared, and I would reevaluate the urinary bladder while the infection is clear to see if the thickening has resolved. If the infection doesn't clear, then a re-culture may help to determine if the current antibiotic is stil appropriate, etc.

Additionally, evaluation for possible concurrent Cushing's could be considered with consideration that some false positives could be present due to the concurrent medical issues (Chronic UTIs, etc.).



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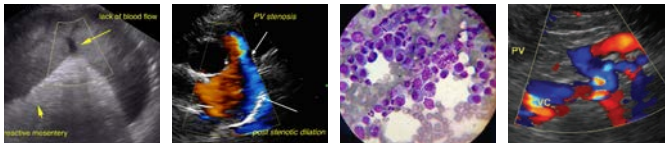

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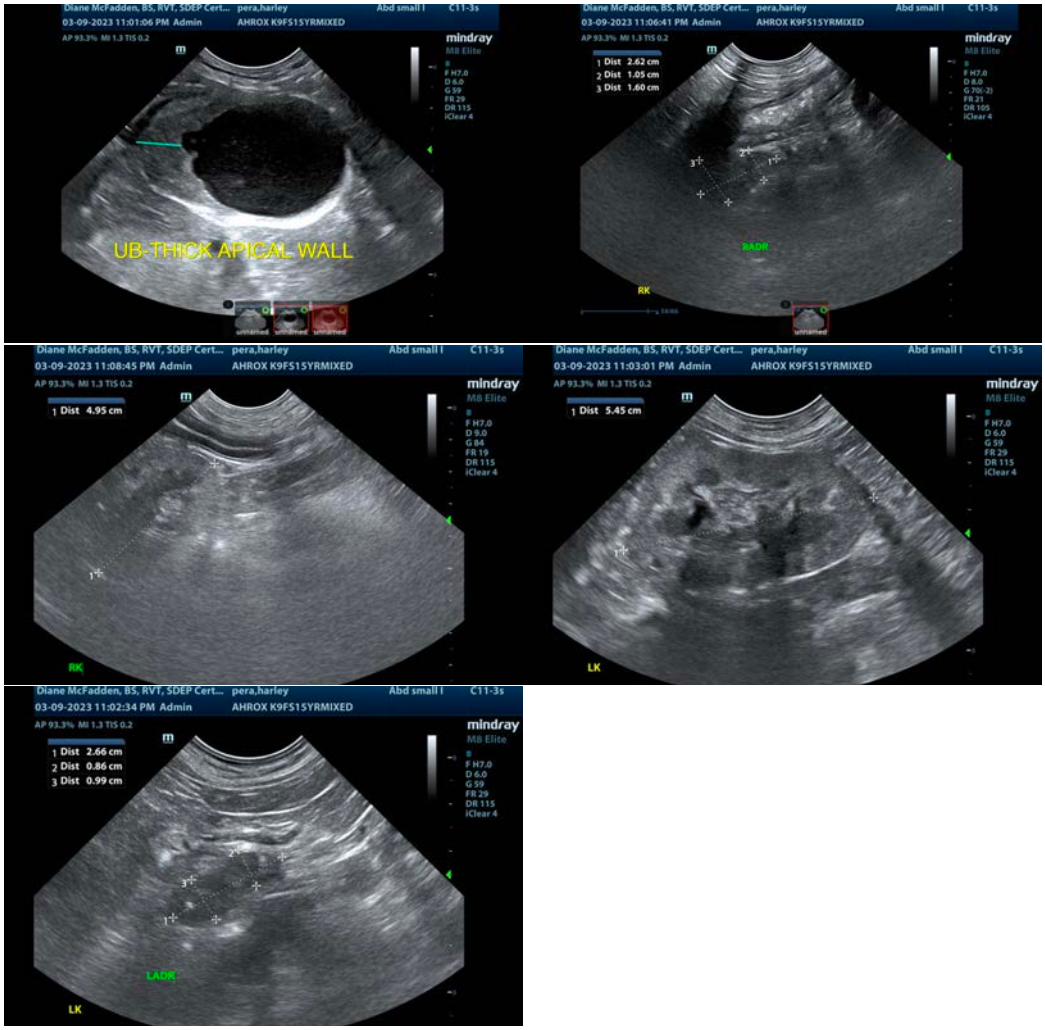

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

kathleen.sennello@sonopath.com