

**DATE PRESENTING CLINICAL SIGNS**

3/9/22

P presented on 3/3/22 for a recheck from ER. P presented to ER on 2/22/22 for a pollakiuria, panting and shaking. P has a hx of hematuria and cystitis. US and Chem 10 performed revealed RBCs and WBCs in urine and an increase in BUN. P was sent home with Baytril and a urine culture was performed which came back negative. At recheck appt, o states that hematuria still present. Chem 10 performed and BUN still high.

PATIENT

Zoey Canavan

SPECIES

Canine

BREED

Westie Terrier

SEX

Spayed Female

AGE

8/25/07

WEIGHT

19.4 Pounds

INTERPRETED BY

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MS, Diplomate ACVIM
(Small Animal Internal
Medicine)

IMAGING PERFORMED BY

Andi Parkinson RDMS

HOSPITAL NAME

Northwind AH

REFERRING VET

Dr. Wilson

INVOICE

36028

Current Medications: 2/22/22- Enrofloxacin 68mg SID, Gabapentin 100mg q8-12 hours.
Lab Results: 2/22/22 Chem 10- BUN 48. UA: RBC >501/hpf. 3/7/22 Chem 17- Creat 1.8, BUN 43.
Radiographs: 1/21/11 fast scan bladder: generalized thickening of bladder.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**Urinary System**

The urinary bladder is moderately distended with anechoic urine. The Bladder wall appears mildly thickened in the apical portion measuring 0.4 cm. The area of the trigone, ureteral papillae and proximal urethra (to a depth of 2cm) appear normal with no mass lesions or cystic calculi visualized. Visualization of the bladder is somewhat impaired by lack of urine distention. Findings are most consistent with mild cystitis or lack of urine distention.

The left kidney has a normal shape and size (4.44 cm) with diffuse small cortical cysts. 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. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.93 cm) with diffuse cortical cysts. 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. 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 0.59 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 0.66 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. There is a 0.51 cm hyperechoic nodule visualized within the parenchyma.

Liver

The liver is large in size and normal 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 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 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.

PRIMARY FINDINGS

- Large, 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.
- Decreased corticomedullary distinction in both kidneys with diffusely cystic cortices – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.
- Mildly irregular/thickened apical portion of the urinary bladder – The bladder mucosal changes could be consistent with cystitis or artifactual due to lack of adequate luminal distension. Bladder neoplasia cannot be ruled out but is considered unlikely in this patient.

SECONDARY FINDINGS

- Hyperechoic nodule in the spleen – The appearance of this nodule favors a benign process, but recommend close monitoring, as neoplasia cannot be excluded as a differential.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

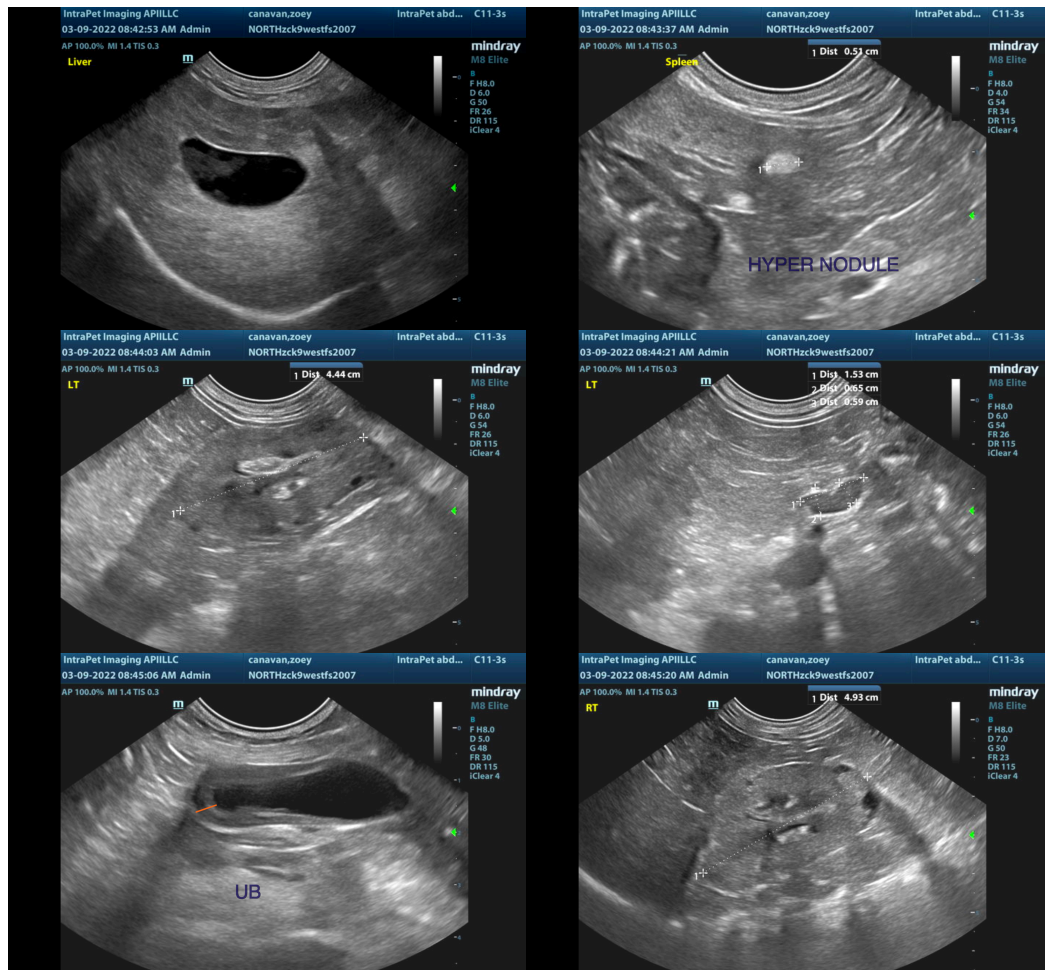
An obvious source for the hematuria reported is not visualized. There is mild thickening of the urinary bladder, but this appears most consistent with lack of urine distention or mild cystitis. Additionally, both kidneys are diffusely cystic, but I do not suspect this as a likely cause for the hematuria reported. Options

moving forward include reevaluation with urine distention to try to evaluate the proximal portion of the urethra, or ideally cystoscopy to evaluate the vaginal vault, distal urethra, and to obtain samples from the urinary bladder. This procedure should be done off of antibiotics so that bacterial cultures can be obtained. Digital evaluation of the distal urogenital tract and urethra can be performed to look for any external sources.

The changes visualized associated with the kidneys are likely consistent with chronic progressive disease. Recommend blood pressure evaluation.

The liver is large and heterogeneous. This is a non-specific finding. Correlate these findings with liver values. If there are significant elevations, then consider liver function testing, a fine needle aspirate, etc.

There is a small hyperechoic visualized in the spleen. The appearance of this nodule trends towards a benign process, but continued monitoring is warranted.





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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