



PATIENT PRESENTING CLINICAL SIGNS

PATIENT
Ella Schmitz

SPECIES
Canine

BREED
Schnauzer Mix

SEX
Spayed Female

AGE
15 years

WEIGHT
21.8 lbs

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY
M Kermendy CVT

HOSPITAL NAME
Wauwautosa VC

REFERRING VET
Dr. Binor

INVOICE
96895

DATE
3/15/22

History: History of renal disease since 08/2020. Has a recent history of UTI's that was treated with Clavamox. Recheck of UA indicates presence of hematuria and crystalluria . Concern for structural disease of the bladder. Rule out cystolith, bladder inflammation, neoplasia, or other. Patient also has a history of pancreatitis.

Abnormal PE/Chem/CBC/UA Results: Last urine culture was negative. SDMA= 18 (0-14) BUN= 42 (0-31) Creatinine= 1.7 (0.5-1.5) Lipase= 568 (0-250)

Radiographic Findings:

No abnormalities are observed with the cardiac silhouette or pulmonary vessels on the right lateral view. The mild interstitial lung pattern is attributed to age related changes. A mild peribronchiolar lung pattern is also observed, which may be due to underlying chronic bronchitis.

Radiopaque structures are visualized on the lateral view, ventral to lumbar vertebrae L3 and L5. These may be consistent with ureteroliths, however, it was not possible to confirm their presence sonographically.

Nephroliths are visualized in the right kidney on the ventral-dorsal view, in addition to possible ureteroliths. However, the latter may be due to artifact, secondary to summation with overlying bowel loops containing ingesta.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is adequately filled. The wall is not thickened. It is smooth and regular, except at its apex, where it is very mildly irregular. No abnormalities are present with the trigone or proximal urethra. A trivial amount of sediment is visualized. There is no evidence of cystoliths, polyps or a mass. The ureteral papilla visualized is unremarkable.

The left kidney is at the low end of normal reference range in size (4.13 cm) for the patient's weight. Although the capsule is smooth, the kidney's shape is mildly deformed. The cortex is mildly to moderately hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. The cortex is hyperechoic to the liver and spleen. Diffuse mineralizations are present in addition to small nephroliths. A nephrolith measuring 2.1 mm is present within the pelvis causing partial obstruction and secondary mild pyelectasia (up to 2.9 mm). A round, smooth, anechoic structure, consistent with a cyst, measuring 6.6 mm in length by 6.2 mm in diameter, is observed ventral to the pelvis. Hydroureter is not visualized.

The right kidney measures 4.31 cm. The capsule is smooth, however, the cortex is moderately hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. The cortex is hyperechoic to the liver and spleen. Moderate mineralization of the arcuate arteries and diverticulae are present, in addition to multiple small nephroliths. There no signs of pyelectasia or an obstruction.

Blood flow of the kidneys is not available for evaluation.



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Adrenal Glands

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Although no abnormalities are observed with its echogenicity or echotexture, it is slightly rounded (“plump”), and at the high end of the normal reference range (0.59 cm). Adrenal hyperplasia secondary to stress (chronic illness) is possible, as is a benign adenoma. There are no obvious signs of neoplasia.

Proper evaluation of the right adrenal gland is not possible due to gas in the surrounding intestinal tract.

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Spleen

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The spleen is within normal limits in size, architecture, echotexture, and echogenicity. It is hyperechoic to both the liver and renal cortex. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

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Liver

There are no obvious signs of hepatomegaly. Liver borders are smooth, but mildly rounded. It is diffusely hyperechoic, i.e., it is isoechoic to the spleen.

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No abnormalities are observed with the hepatic vessels other than mild to moderate perivascular cuffing, which is most likely due to fat, with or without fibrosis. There are no obvious signs of neoplasia.

A moderate amount of echogenic material (sludge) is present, both free floating and which has settled by gravity. The sludge varies in echogenicity. Obvious choleliths are not visualized, however, inspissated sludge in the form of nodules is noted. Neoplasia is not observed.

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Gastrointestinal

The gastric wall and pylorus are normal in thickness. Ingesta is noted within the lumen. There is no loss of definition of the normal architecture of the wall layers. No obvious abnormalities are observed with its peristalsis.

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The small intestinal wall thickness is within normal limits and there is no evidence of dilation. The definition of the wall layers is preserved. The colonic wall is not thickened and mural detail is considered normal. There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction.

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Pancreas

Both the left and right limbs of the pancreas have a coarse echotexture and are mildly heterogeneous. These changes are most likely due to nodular hyperplasia and areas of fibrosis, respectively.

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Other

Lymph nodes: No abnormalities are observed.

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Abdominal effusion is not visualized.



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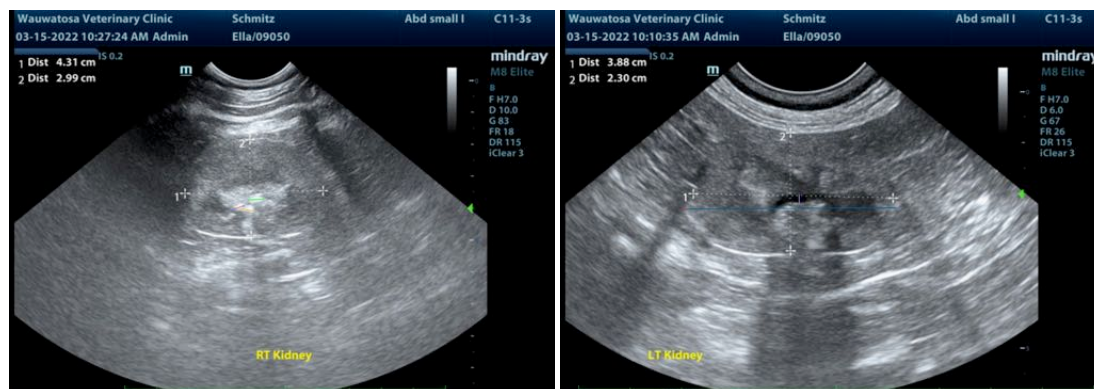
ULTRASONOGRAPHIC FINDINGS

- Chronic renal disease, with bilateral nephrolithiasis and mild pyelectasia of the left kidney, are evident. There are no obvious signs of pyelonephritis, however, the latter cannot be excluded based on the absence of sonographic abnormalities. The mineralizations and nephroliths are likely acting as a chronic nidus for infection, which could explain the recurring urinary tract infections. Another possible underlying cause is hyperadrenocorticism (see below).
- The diffuse hyperechogenicity of the liver is highly suggestive of a vacuolar hepatopathy, which may occur due to stress (chronic illness) or hyperadrenocorticism (HAC). Hyperadrenocorticism is considered less likely based on the absence of clinical signs, however, the hepatic changes and findings of the left adrenal gland may require a re-evaluation of the abdominal ultrasound in 3-4 months. Differential diagnoses, such as hepatitis and cholecystitis are considered unlikely, however, cholestasis cannot be excluded based on the GB changes observed.
- Nodular hyperplasia and fibrosis of the pancreas are suspected. Nodular hyperplasia is considered a benign, age related change. Fibrosis may be due to age, in addition to previous episodes of pancreatitis. There are no signs of active pancreatitis or neoplasia.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A urine culture and sensitivity is recommended. If it is negative, a urine protein: creatinine ratio is strongly suggested. A fundic exam and arterial blood pressure evaluation are also recommended to exclude hypertension secondary to chronic renal disease.

Evaluation of the conformation of Ella's vulva and perivulvar region is recommended. Basic hygiene should be pursued on a daily basis with 0.025-0.05% chlorhexidine, ensuring the area is kept dry to decrease risk of infection. Any fur in the surrounding area should also be trimmed to decrease risk of bacterial wicking.





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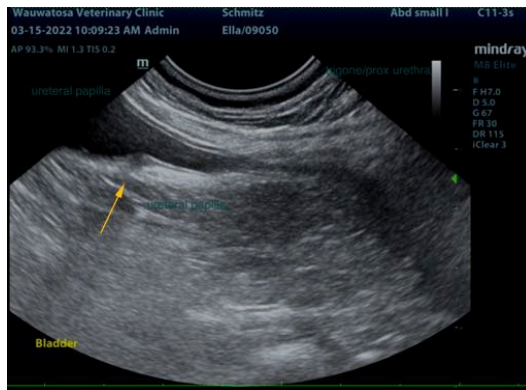
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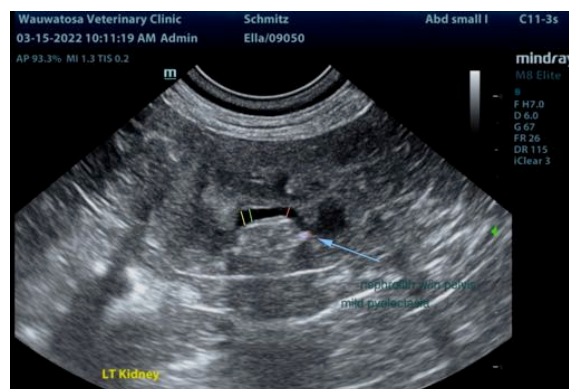
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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