

## PATIENT

Lizzy Karschner

## SPECIES

Canine

## BREED

Norfolk Terrier

## SEX

Spayed female

## AGE

7 years

## WEIGHT

13.8 lbs

## INTERPRETED BY

Dr. Alicia Angosto  
Guerrero

## IMAGING PERFORMED BY

Amanda Hockenbrock

## HOSPITAL NAME

Lewisburg VH

## REFERRING VET

Dr. Brehm

## INVOICE

69620

## DATE

12/12/25

## PRESENTING CLINICAL SIGNS

History: hematuria first noticed 12-8-25 decreased appetite Started clavamox 12-9-25  
Abnormal PE/Chem/CBC/UA Results: Urinalysis: BLD and CaOX (6-20) pH=7 No WBC or Bacteria  
Chem10: ALT and ALKP elevated

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### Urinary System

The urinary bladder lumen is normally distended, and the bladder wall appears thin and smooth throughout most of its extent, except at the cranial pole and cranial dorsal wall, where the wall appears irregular and thickened, measuring approximately 3–6 mm. Several polypoid structures with a narrow base of attachment are identified arising from the vesical mucosa. One measures 0.73×0.43 cm, and another elongated structure measures approximately 1.0×0.5 cm. The urine is anechoic. Multiple urinary calculi of moderate size are observed, although accurate measurement is difficult due to aggregation; they are estimated to measure approximately 0.7–0.8 cm. The bladder neck and proximal urethra appear normal.

The left kidney is normal in shape and size, measuring 3.91×2.43 cm, with a cortical thickness of 0.40 cm in the sagittal plane. The right kidney is normal in shape and size, measuring 4.26×2.53 cm, with a cortical thickness of 0.45 cm in the sagittal plane. In both kidneys, the renal cortex is isoechoic compared to the liver parenchyma. The corticomedullary ratio is normal, and corticomedullary definition is preserved. Multiple hyperechoic foci with intermittent acoustic shadowing are identified within the renal collecting system, most consistent with early nephrolithiasis or fine mineral sediment within the renal calyces. There is no evidence of pyelectasia or hydronephrosis.

### Adrenal Glands

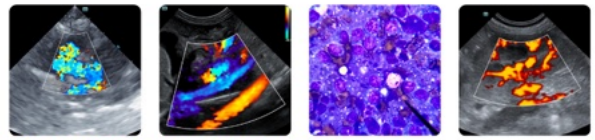
Both adrenal glands show normal shape and echogenicity. The left adrenal gland measures 0.40 cm at the cranial pole and 0.51 cm at the caudal pole. The right adrenal gland measures 0.50 cm at the cranial pole and 0.49 cm at the caudal pole.

### Spleen

Splenic thickness is 1.63 cm. The parenchyma demonstrates normal echogenicity and a fine, homogeneous echotexture without focal parenchymal abnormalities. The splenic capsule is smooth and regular. Splenic vasculature appears normal.

### Liver

The liver is subjectively normal in size, with sharp edges and a regular contour. The hepatic parenchyma appears uniform and isoechoic compared to the falciform fat, with a normal echotexture. No hepatic lymphadenopathy is observed.



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The gallbladder lumen is normally distended. The wall is thin, and the contents are primarily anechoic with a small amount of sediment producing distal acoustic shadowing. No dilation of the cystic duct or common bile duct is observed.

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### *Gastrointestinal*

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The stomach is empty and folded, with a mural thickness of 1.97 mm and preserved wall layering. The pylorus measures 3.10 mm. The duodenum measures 2.97 mm. The jejunum measures 2.73 mm, and the ileum measures 1.46 mm. Wall layering is normal throughout. The ileocecal junction is not visualized. No signs of inflammation, ileus, or foreign material are identified. The colon wall thickness measures 0.78 mm, with formed feces present in the descending segment.

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### *Pancreas*

The pancreas could not be visualized; however, the evaluated regions do not show evidence of inflammatory changes.

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### *Peritoneal Cavity*

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No abdominal effusion or evidence of peritonitis is observed. Abdominal lymph nodes are not visualized, but the surrounding regions appear unremarkable. The iliac trifurcation appears normal.

## ULTRASONOGRAPHIC FINDINGS

### IMAGING PERFORMED BY

Amanda Hockenbrock

### PRIMARY FINDINGS

- Focal irregular thickening of the cranial and craniodorsal urinary bladder wall.
- Multiple polypoid intraluminal structures arising from the vesical mucosa with narrow attachment bases.
- Multiple aggregated urinary bladder calculi, estimated to measure approximately 0.7–0.8 cm.
- Multiple hyperechoic foci with intermittent acoustic shadowing within the renal collecting systems, compatible with mineral sediment or early nephrolithiasis.

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### SECONDARY FINDINGS

- Small amount of gallbladder sediment producing distal acoustic shadowing.

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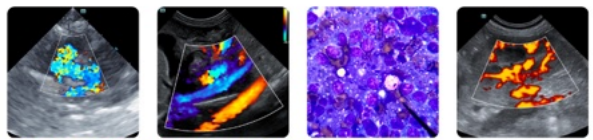
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## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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The combination of focal, irregular urinary bladder wall thickening at the cranial aspect, multiple polypoid mucosal structures, and concurrent cystolithiasis is most consistent with chronic inflammatory bladder disease, such as polypoid cystitis, particularly in the context of hematuria and documented urinary crystals. The presence of multiple aggregated bladder calculi likely contributes to mucosal irritation and may represent a primary or perpetuating factor in the development of the observed



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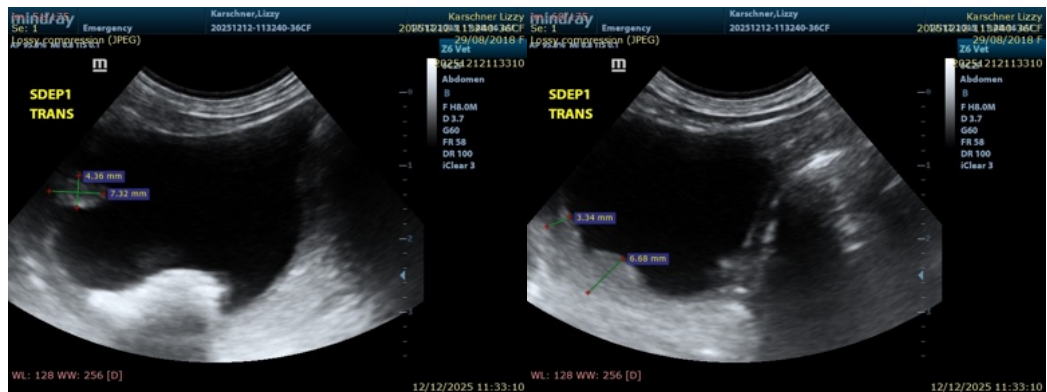
bladder wall changes and clinical hematuria. A neoplastic process involving the urinary bladder, including urothelial (transitional cell) carcinoma, is considered highly unlikely, although it cannot be definitively excluded based on ultrasonography alone, particularly given the focal nature of the mural changes.

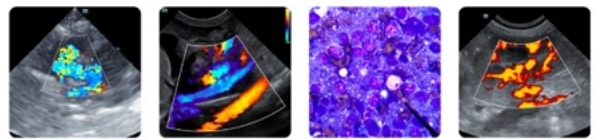
Renal findings of mineral foci within the collecting systems are compatible with early nephrolithiasis or fine mineral sediment and may be clinically incidental at this stage, given the absence of pelvic dilation or hydronephrosis.

Incidental gallbladder sediment is noted without evidence of biliary obstruction or cholecystitis.

**Recommendations**

- Based on the ultrasonographic findings and clinical presentation, surgical management is recommended, including removal of the urinary bladder calculi and surgical excision of the intraluminal polypoid lesions, with submission of all retrieved material for histopathologic analysis. This approach would allow definitive characterization of the bladder wall lesions, address ongoing mucosal irritation, and help exclude an underlying neoplastic process.
- Postoperative dietary management is also recommended to reduce the risk of recurrence of urinary calculi, tailored to the mineral composition of the uroliths when available.





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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.

Alicia Angosto Guerrero, DMV, PgDip, MSc.

MV Esp Ultrasound in Domestic and Wild Animals

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