



**PATIENT PRESENTING CLINICAL SIGNS**

Cooper Guth Elevated liver values, pollakiuria, urinary crystals.

**SPECIES** ALP 455, Normal ALT 76, Urine specific gravity 1.036, pH 5.0, 1+protein, 2+epithelial cells

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**BREED** The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra exhibited normal tone to a depth of 2.0 cm. Mild nonuniform thickening of the urinary bladder wall was present. Multiple, well-demarcated, primarily curvilinear, cystic calculi with distal acoustic shadowing were present in the dependent lumen. An example of an echogenicity measured ~0.8 cm in diameter. The cystitis pattern was primarily noted in the ventroapical urinary bladder, likely secondary to chronic irritation or inflammation owing to the cystic calculi. The ventroapical urinary bladder wall width measured 0.86 cm. No evidence of urinary bladder neoplastic criteria. No evidence of obstruction to urinary outflow.

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**AGE** The residual prostate was free of pathology.

2014 The area of the aortic trifurcation was free of pathology.

**WEIGHT** Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation, or pyelectasia. The left kidney measured 4.0 cm in length. The right kidney measured 4.2 cm in length. No evidence of medullary mineralization.

19.6

**INTERPRETED BY**

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DVM, DABVP  
(Canine and Feline)

**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.7 cm length x 0.35 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 1.6 cm length x 0.60 cm width at the caudal pole.

**IMAGING PERFORMED BY**  
Rebekah Jakum, CVT  
ARDMS/RVT

**Spleen**

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

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**Liver/ Gallbladder**

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. A solitary to intermittent, discrete, non-disruptive, hypoechoic, intraparenchymal nodules were present. An example of a liver nodule measured 1.5 cm in diameter.

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**PATIENT**

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The gallbladder was non-distended in size containing primarily anechoic content with mild, echogenic, nonorganized, gallbladder debris. The cystic and common bile ducts were normal.

**Gastrointestinal**

**SPECIES**

Canine

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

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Normal visible colon wall layers were present with apparent formed feces in lumen.

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**Pancreas**

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

**AGE**

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**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.

**WEIGHT**

19.6

**ULTRASONOGRAPHIC FINDINGS**

- Multiple cystic calculi with ventroapical cystitis
- Chronic hepatopathy exhibiting parenchymal remodeling with focal to intermittent discrete, non-disruptive, intraparenchymal nodules - nonspecific yet subjectively benign, chronic vacuolar hepatopathy, inflammatory / immune-mediated disease, hyperplasia, hematopoiesis, mild fibrosis, or other hepatopathy with neoplastic criteria considered unlikely
- Mild gallbladder debris (non-mucocele)
- Normal bilateral kidneys - no evidence of pyelonephritis or renal mineralization

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Urine C/S to assess for underlying UTI is suggested. No evidence of a portosystemic shunt.

Screening hepatic FNA cytology could be considered primarily to assess for or possibly identify inflammatory cells or evidence of anagenic stimulation.

Hepatosupportive medications including Denamarin and Ursodiol may prove beneficial.

Cystotomy with urinary bladder flush, stone analysis, urinary bladder biopsy for histopathology, and C/S +/- hepatic biopsies, assuming normal clotting status, is recommended.

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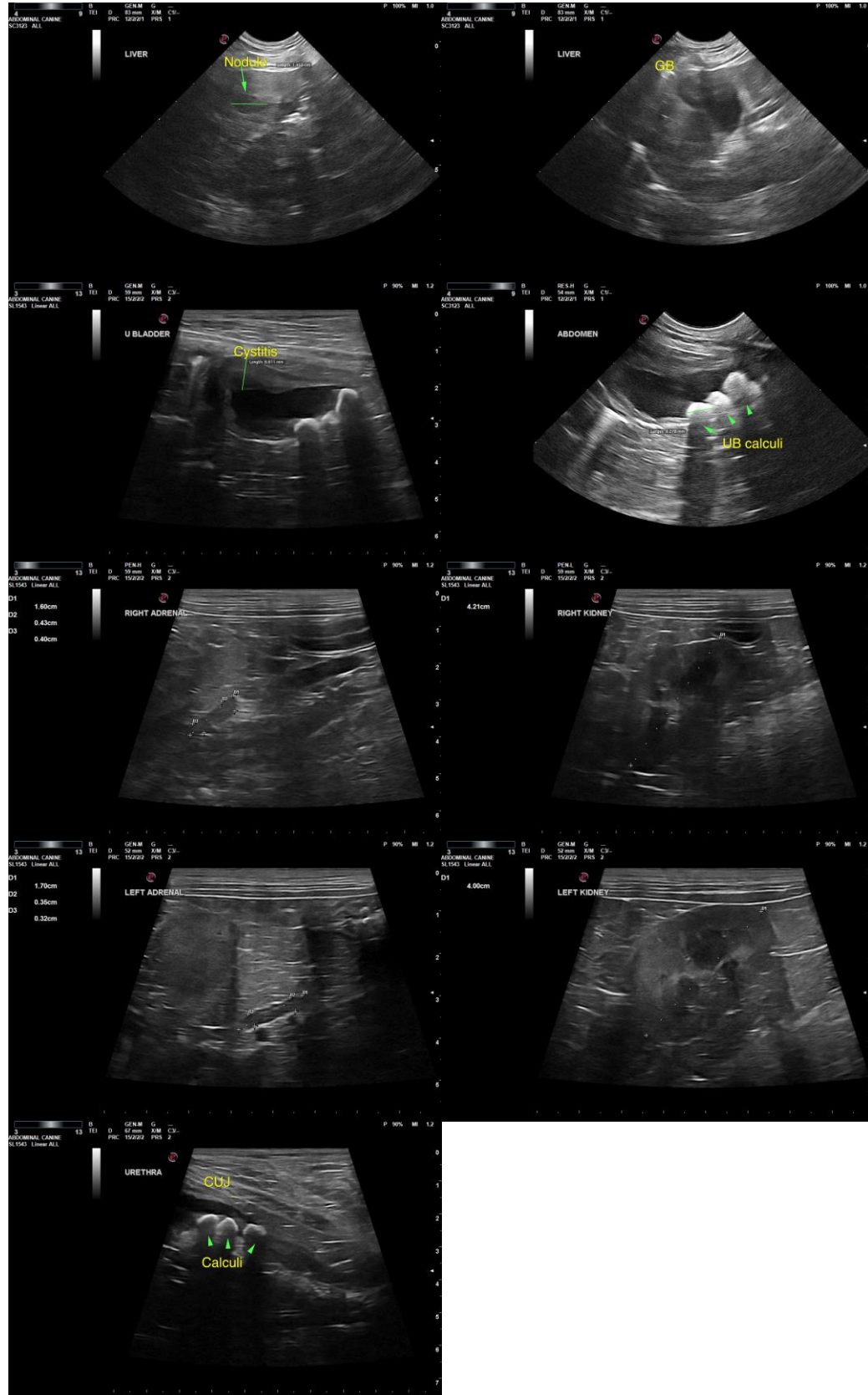
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

**BREED**

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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.

**SEX**

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