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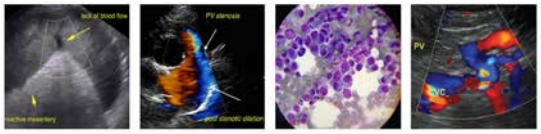


SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

**PATIENT**

Lily McGrath

**SPECIES**

Canine

**BREED**

Pug

**SEX**

FS

**AGE**

13 years

**WEIGHT**

23.6 Pounds

**INTERPRETED BY**

R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

**IMAGING PERFORMED BY**

Rebekah Jakum, CVT ARDMS/RVT

**HOSPITAL NAME**

Lehigh Valley AH (Allen)

**REFERRING VET**

Dr. Meyer

**INVOICE**

25381

**DATE**

9.14.2021

## PRESENTING CLINICAL SIGNS

History: Diabetic, becoming more difficult to regulate, elevated liver values

Medication: Vetsulin 11.5u BID

Chem – Glucose 392, BUN 33, Crea 1.2, Na:K ratio 25, ALP 923, ALT <1, AST 59, USG 1.035, 3+ glucose, negative ketones

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder presented uniformly thickened urinary bladder wall isoechoic to the adjacent normal urinary bladder wall. The luminal margin of the thickened urinary bladder wall was mildly asymmetrical in contour. Apical urinary bladder wall measured 0.75 cm. A small amount of dependent urinary bladder mineral as well as non-obstructive urethral mineral were present. The urethra was normal in structure and tone to a depth of 3.0 cm.

Normal renal size with asymmetrical margination was present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Mild loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. Pinpoint areas of medullary pelvic mineral were present in both kidneys. Mild pyelectasia noted in the right kidney. Small cortical cysts noted in both kidneys. The right kidney measured 5.4 cm. The left kidney measured 5.3 cm.

The area of the aortic trifurcation was free of pathology.

### *Adrenal Glands*

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.75 cm length x 0.58 cm at the caudal pole.

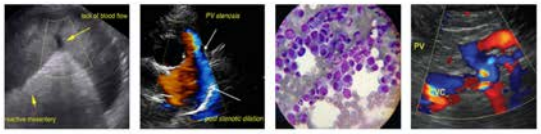
A focal, well defined, hyperechoic nodule was present in the cranial right adrenal gland with mild associated symmetrical capsule expansion. The nodule did not exhibit signs of mineralization or vascular invasion. The nodule measured 1.0 cm x 0.84 cm in diameter. The overall right adrenal gland measured 2.6 cm length x 1.1 cm at the cranial pole and 0.59 cm at the caudal pole. This is likely suggestive of a benign process such as adenoma, granuloma or myelolipoma if no clinical signs of adrenal disease are currently present. Potential emerging aggressive neoplasia cannot be ruled out. Therefore, recheck ultrasound every 3-6 months is suggested to monitor for changes in size or appearance. A screening blood pressure is suggested.

### *Spleen*

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. Subtle echogenic parenchymal striations to foci present, suggestive of potential areas of splenic fibrosis, microinfarction, or emerging mineralization. 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. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age related remodeling with minor potential for inflammatory or neoplastic disease.

### *Liver*

The liver presented increased in size. The parenchyma of the liver was subjectively increased in echogenicity compared to the spleen and renal cortices. The echotexture of the liver parenchyma was





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uniform with a mild coarse echotexture. The capsule of the liver was symmetrical in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non distended in size with moderate, non-dependent yet non-organized debris. Minor anechoic to hypoechoic rim noted between the non-dependent debris and inner luminal walls, suggestive of mucus. No evidence of gallbladder or peripheral inflammation. The cystic duct and common bile ducts were normal without evidence of dilation.

### *Gastrointestinal*

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.

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

### *Pancreas*

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

## ULTRASONOGRAPHIC FINDINGS

- Cystitis with minor urinary bladder and non-obstructive urethral mineral
- Bilateral chronic renal changes with minor focal medullary mineralization and minor right kidney pyelectasia
- Right adrenal nodule – suspect adenoma
- Echogenic liver – steroid hepatopathy/vacuolar/metabolic (diabetic) hepatopathy, cholangiohepatitis, or other with neoplasia considered an unlikely differential diagnosis.
- Moderate gallbladder debris – potential early mucocele.
- Mildly heterogeneous pancreas – age related pancreatic changes, parenchymal remodeling owing to previous inflammation or potential low-grade chronic inflammation possible.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This patient may be passing small amounts of mineral from the kidneys into the urinary bladder. The right kidney pyelectasia may be owing to chronic renal changes, potential pelvic scarring possibly owing to previous calculi passage, IV fluid therapy (if applicable). Urine C/S and protein: creatinine ratio on sterile urine sample is recommended.

Potential for emerging right adrenal neoplasia such as pheochromocytoma or adenocarcinoma, yet considered unlikely. Sonographic monitoring of the right adrenal nodule with initial recheck in 4 weeks suggested. ACTH stimulation test could be considered if clinical suspicion of hyperadrenocorticism.

For an additional charge, internal medicine consult can be utilized through Sonopath.com. You can select the internal medicine drop down at http://spa.sonopath.com/.

One of the world's top internists & SonoPath associate Dr. Remo Lobetti BVSc, MMedVet, PhD, DECVIM can evaluate your case through SonoPath. https://sonopath.com/resources/sonopath-services/internal-medicine-teleconsultation-services

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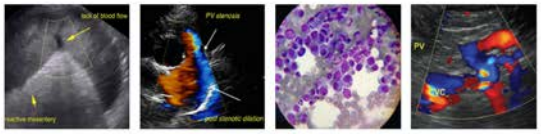

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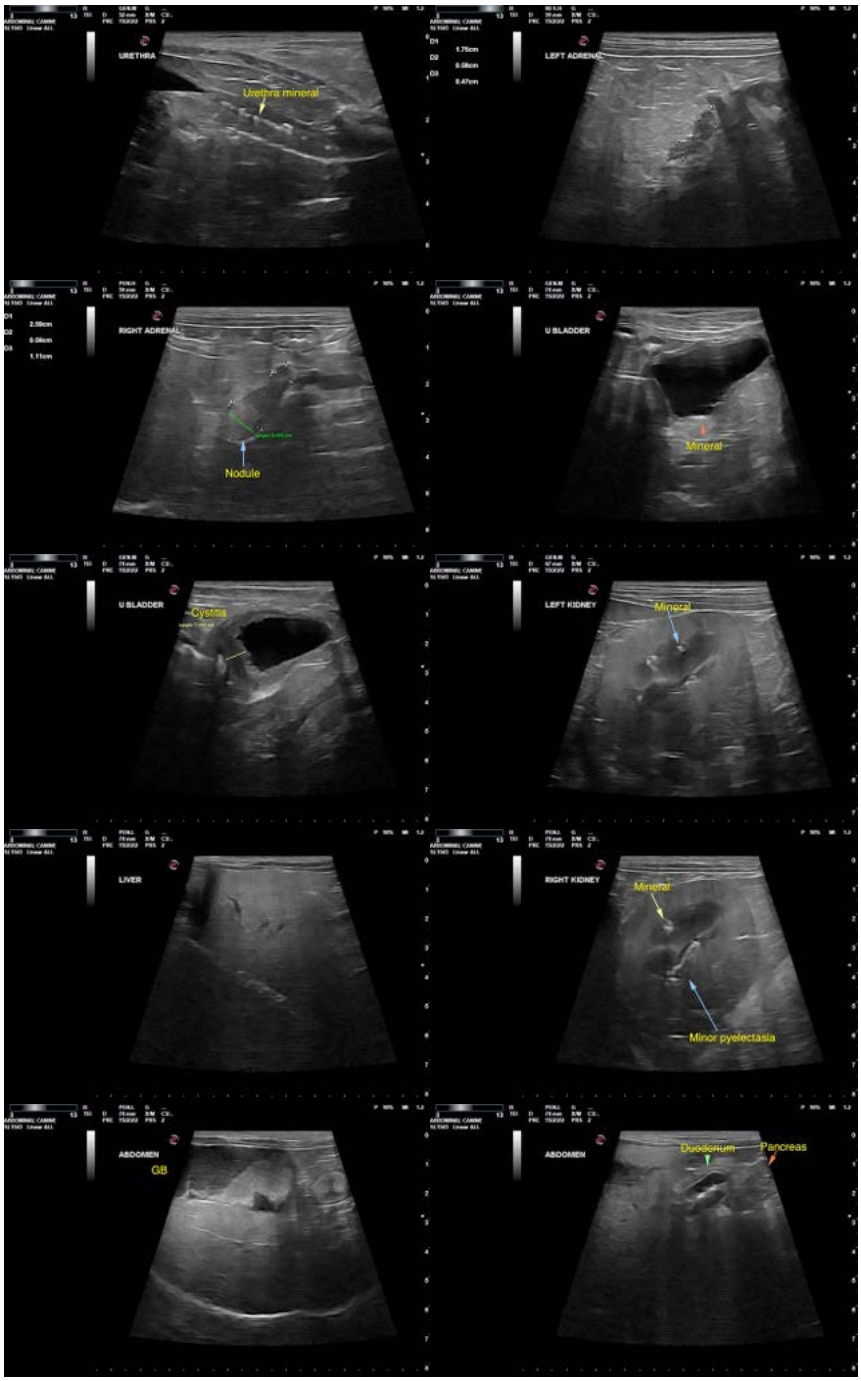


**The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

**R. McKenzie Daniel, DVM, DABVP (Canine/Feline Practice)**
mac.daniel@sonopath.com