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Clinical Sonography & Telecytology
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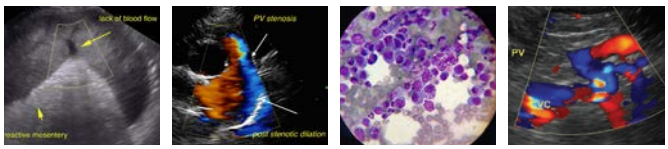

SonoPath.com
1-800-838-4268 info@sonopath.com

**PATIENT**
Lulu Holfioni

**SPECIES**
Canine

**BREED**
French Bulldog

**SEX**
Spayed Female

**AGE**
11 Years

**WEIGHT**
9.1 kg

**INTERPRETED BY**
Beth Johnson, DVM DACVIM

**IMAGING PERFORMED BY**
Patti Mayfield, DVM

**HOSPITAL NAME**
Sunriver Vet Clinic

**REFERRING VET**
Emily Kent, DVM

**INVOICE**
43848

**DATE**
7/6/23

## PRESENTING CLINICAL SIGNS

Presented for recheck urine, check lesions on neck. Tech collected urine via cystocentesis and urine is still very dilute. O reports P has been urinating large amounts of dilute urine twice every hour. Previous abx (for infectious cystitis diagnosed with UA) seemed to help for maybe 1 day, but O has overall not noted any major improvements. P has still been PUPD. Patient's behavior, energy level, eating, and defecation are within normal limits. No C/S/V/D.

Abnormal PE/Chem/CBC/UA Results: PE: — mature cataracts OU, stage II dental disease, focal region of dermatitis on the dorsal intrascapular region consistent with possible calcinosis cutis and moderate alopecia ventrally. Stiff gait, BCS: 6/9 LDDST: —pre-Dex: 6.9 ug/dL (1-6) — post- 4 hours: 6.3 — post- 8 hours: 9.4 The result of the low dose dexamethasone suppression (LDDS) test in this dog may support a diagnosis of hyperadrenocorticism and does not differentiate pituitary-dependent from adrenal-dependent disease. 6/7/23: CHEM: — BG: 119 (H) — creatinine: 0.3 (L) — Cl: 103 (L) — ALT: 159 (H) — ALP: 339 (H) — GGT: 20 (H) CBC: — WNL T4: 0.9 (L) 6/15/23: UA (free catch): USG: 1.011, pH: 6.5, mucus present, otherwise inactive sediment UPC ratio: 0.8

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia, mineral or infarcts observed. Small cortical cysts noted bilaterally. The left kidney measures 4.64 cm. The right kidney measures 5.26 cm.

### *Adrenal Glands*

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The left adrenal gland measures 0.77 cm at the cranial pole and 0.81 cm at the caudal pole. The right adrenal gland measured 1.1 cm at the cranial pole and 0.62 cm at the caudal pole.

### *Spleen*

The spleen contains a 4.2 cm x 5.8 cm, heterogeneous, primarily isoechoic mass with microcavitations throughout it, resulting in a capsular bulge in the mid spleen.

### *Liver*

The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately overdistended with organized, aggregated and centralized non-gravity dependent sludge. Striations of sludge separated by anechoic areas are noted extending from the lumen to the luminal wall. The wall is mildly thick, irregular and hyperechoic. The sludge and luminal contents extend into a mildly dilated cystic duct.

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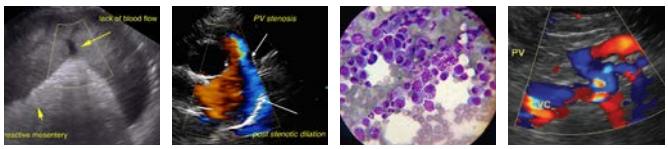

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### *Gastrointestinal*

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

### *Pancreas*

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

### *Free Abdomen*

There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

There is no evidence of heart base or pericardial pathology noted in these images at this time. If cardiac function evaluation is desired a full echocardiogram is recommended.

## PRIMARY FINDINGS

- Heterogeneous, partially cystic/cavitated splenic mass – concerning for infiltrative neoplasia such as round cell neoplasia versus sarcoma versus other. Having said that, benign cysts, hematomas, extramedullary hematopoiesis, etc. can mimic neoplasia and cannot be differentiated without tissue sampling.
- Gallbladder mucocele
- Bilateral adrenomegaly – consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism vs stress or normal variant. Interpret in combination with clinical signs of hyperadrenocorticism.

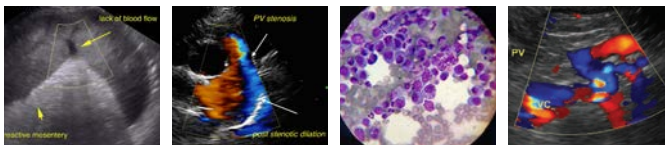
## SECONDARY FINDINGS

- Age related kidney changes

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This patient's ultrasound was reportedly to help determine whether the recently diagnosed hyperadrenocorticism appears to be adrenal versus pituitary dependent, and based on the mild symmetrical bilateral adrenomegaly, this patient's hyperadrenocorticism is most likely pituitary dependent.

A blood pressure is recommended if not recently evaluated.



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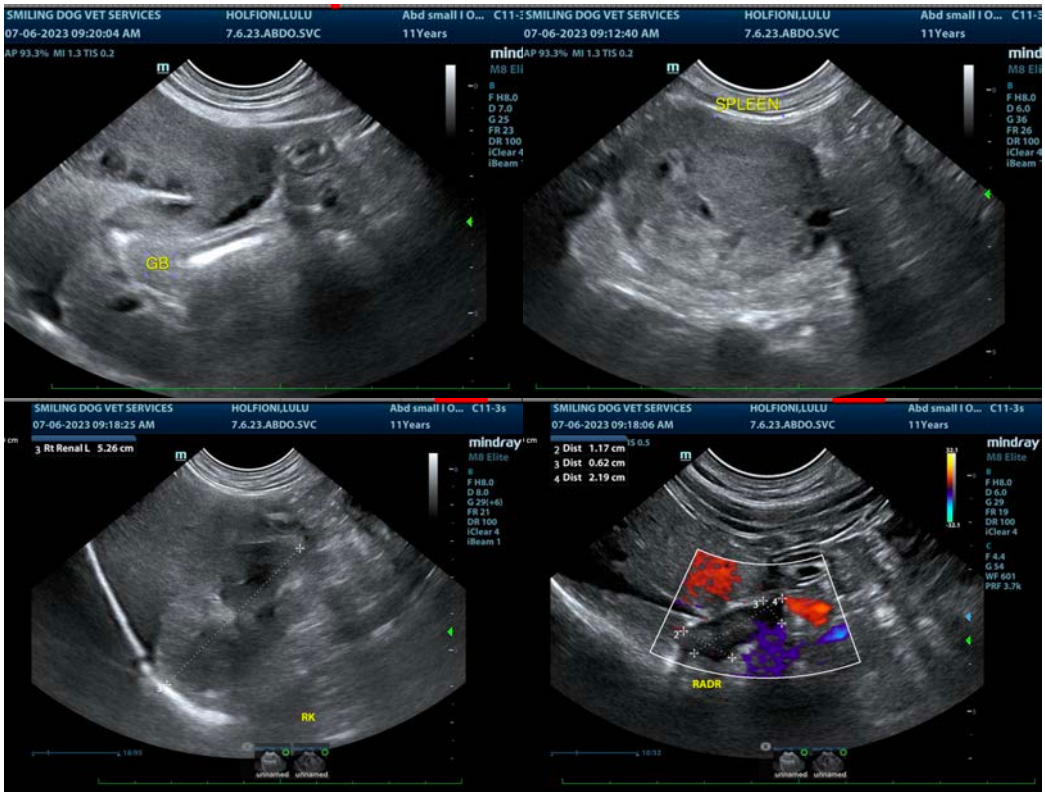
Urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

Unexpected, however, was the discovery of both a gallbladder mucocele and a splenic mass. Therefore, further diagnostic considerations if pursued include:

Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.

A fine needle aspirate of the spleen if patient's coagulation status is appropriate.

There are no clinical signs of a mucocele reported at this time (i.e., decreased appetite, nausea, cranial abdominal pain, etc.). Therefore, if a conservative approach is elected while medically managing this patient's pituitary dependent hyperadrenocorticism, Ursodiol therapy +/- broad-spectrum antibiotics could be considered with close monitoring for improvement versus progression. If, however, a more invasive approach is elected, an exploratory laparotomy for both splenectomy and cholecystectomy could be considered.



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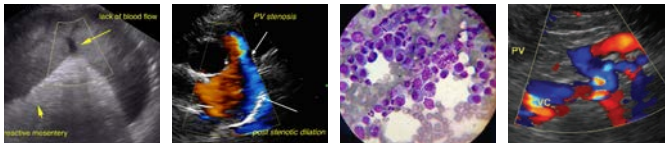

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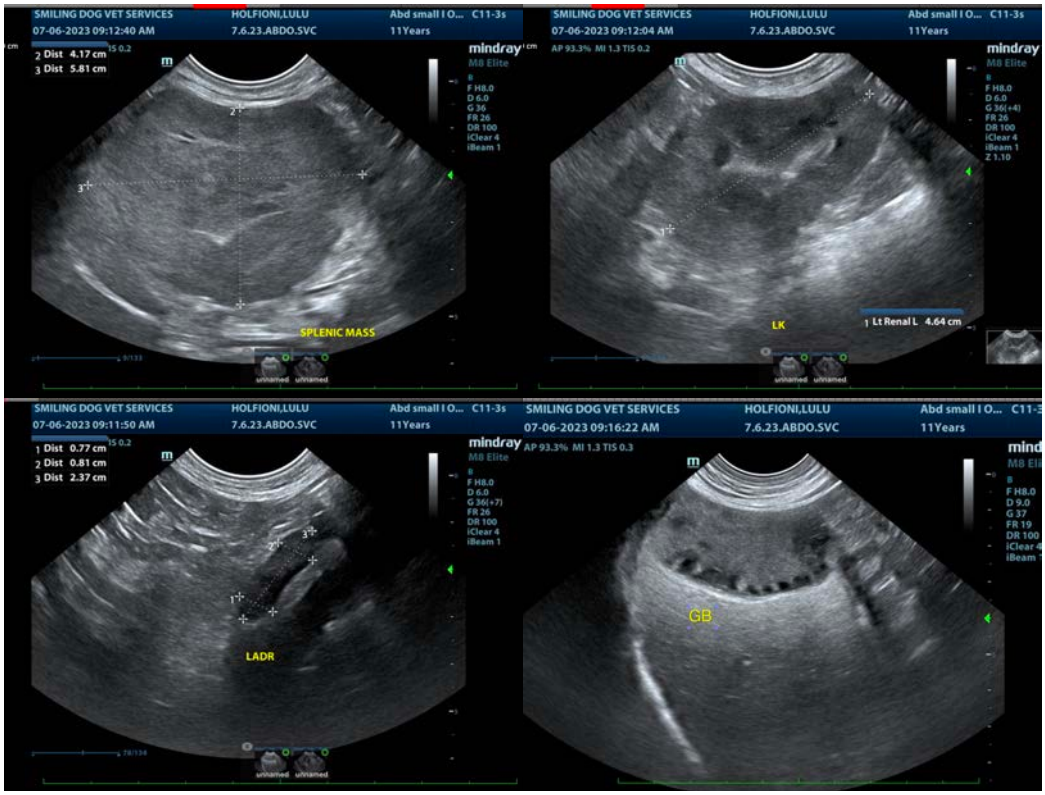


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

**Beth Johnson**, DVM, DACVIM
info@sonopath.com