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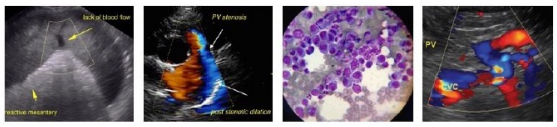


THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

**PATIENT**

Chloe Killinger

**SPECIES**

Canine

**BREED**

Cocker Spaniel X

**SEX**

Spayed Female

**AGE**

13 Years

**WEIGHT**

9.4 kg

**INTERPRETED BY**

Beth Johnson, DVM DACVIM

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Wellington Vet Services

**REFERRING VET**

Dr. Kamaitis

**INVOICE**

43640

**DATE**

12/21/22

## PRESENTING CLINICAL SIGNS

Vomiting and inappetant past two weeks. Grade 3 dental disease. Has been on Clavaseptin, Sulcrate, Cerenia. Gastritis? Kidneys? Liver?

Abnormal PE/Chem/CBC/UA Results: Extremely elevated ALP, ALT, AMY, TBIL, BUN, Phosphorous and Creatinine.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

Urinary bladder is adequately distended with primarily anechoic contents and occasional echogenic non-shadowing debris. Apical urinary bladder wall is diffusely thick (0.46 cm). Mucosa is hyperechoic and irregular. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal 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. Multiple small cortical cysts noted bilaterally. The right kidney measures 5.47 cm. The left kidney measures 5.45 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 2.67 cm long x 0.85 cm at the cranial pole and 1.27 cm at the caudal pole. The right adrenal gland measures 2.43 cm long x 1.25 cm at the cranial pole and 0.68 cm at the caudal pole.

### *Spleen*

Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Multifocal mineral foci are noted. Splenic vasculature appears normal.

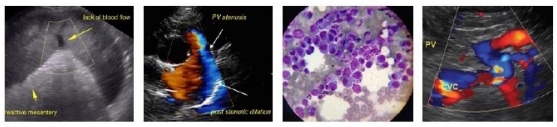
### *Liver*

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. There is no evidence of CBD dilation.

### *Gastrointestinal*

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.





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The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is 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.

## PRIMARY FINDINGS

- 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.
- **Spleen mineralization –** This is a benign change but can be associated with endocrinopathies, especially hyperadrenocorticism.

## SECONDARY FINDINGS

- **Chronic Cystitis -** Urinary bladder wall changes are most consistent with chronic cystitis. Infiltrative neoplasia cannot be ruled out but is considered less likely give the location and diffuse nature of the changes.
- Age related kidney changes with multiple bilateral cortical cysts

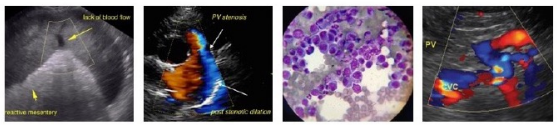
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Part of this patient's pathology described above, primarily the adrenal changes, potentially the splenic mineralization, etc., and the patient's reported increased liver enzymes could all be secondary to hyperadrenocorticism. However, hyperadrenocorticism does not result in vomiting, decreased appetite, etc. typically. Therefore, the gallbladder mucocele is believed to be the primary immediate clinical concern.

Recommendations include determining true renal versus prerenal azotemia, by beginning with a urinalysis and, if indicated based on urinalysis results, urine culture. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

If true azotemia is present in addition to the increased liver enzymes, then testing for Leptospirosis is warranted. Testing for Leptospirosis could be pursued with just liver enzyme changes but is even more suspected with concurrent azotemia.

If cranial abdominal pain is present, further supporting mucocele as the cause of this patient's clinical signs, then exploratory laparotomy for planned cholecystectomy and liver biopsy should be pursued





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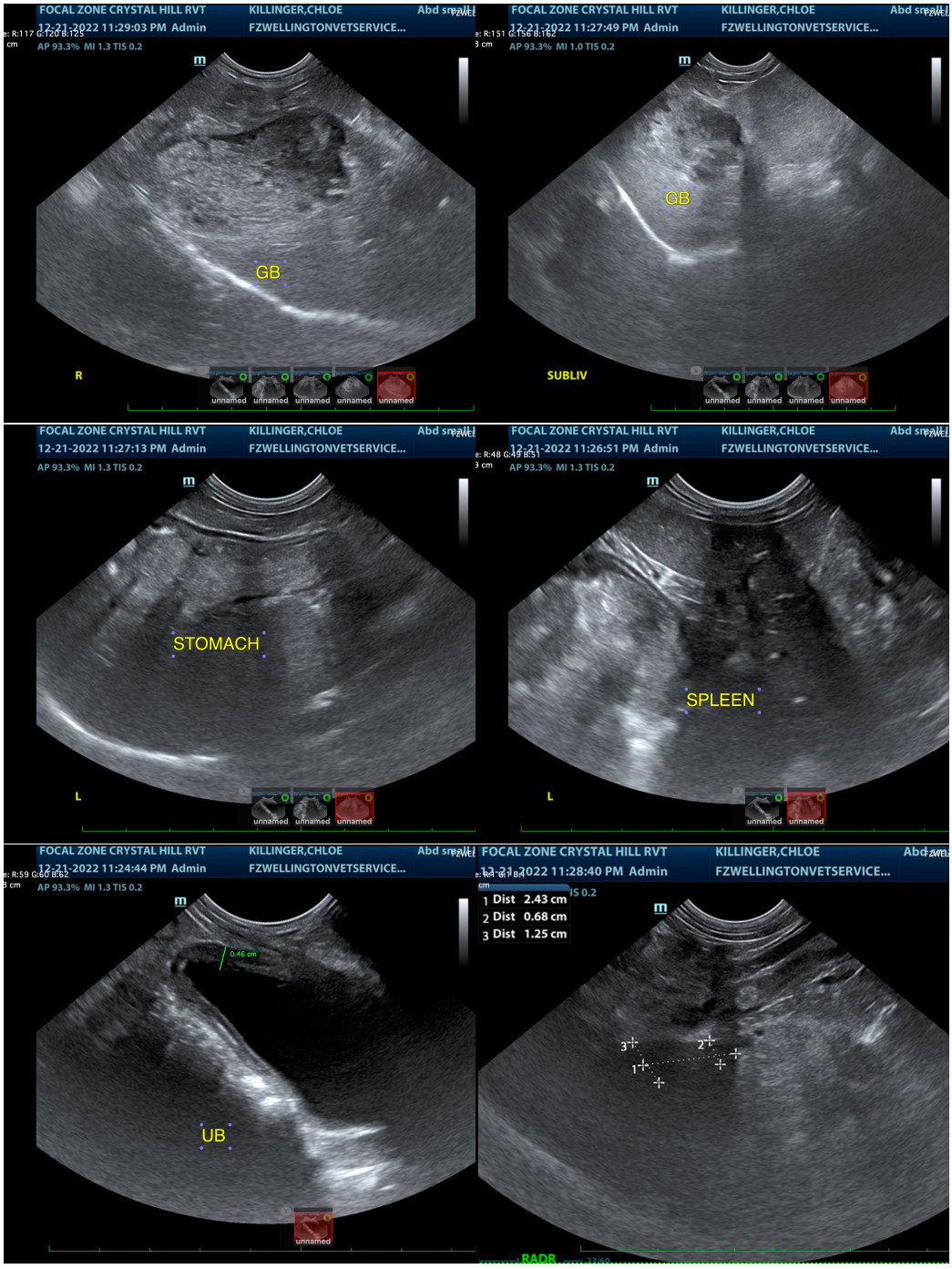
sooner rather than later. However, if a more conservative approach is elected, empirical medical management with hepatic nutraceuticals including Ursodiol, broad-spectrum antibiotics, as well as symptomatic medical management of the nausea, inappetence, etc. could be tried with very close monitoring for improvement versus progression, being sure to educate owners on risks of rupture, etc.

Once patient is stabilized from this episode, if clinical signs of hyperadrenocorticism are present or develop in the future, then further testing is recommended in the form of a low-dose Dexamethasone suppression test. However, testing is not warranted at this time, given the acute illness.



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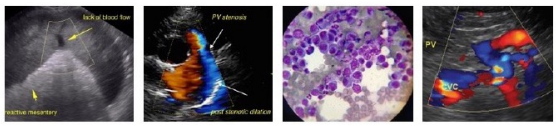

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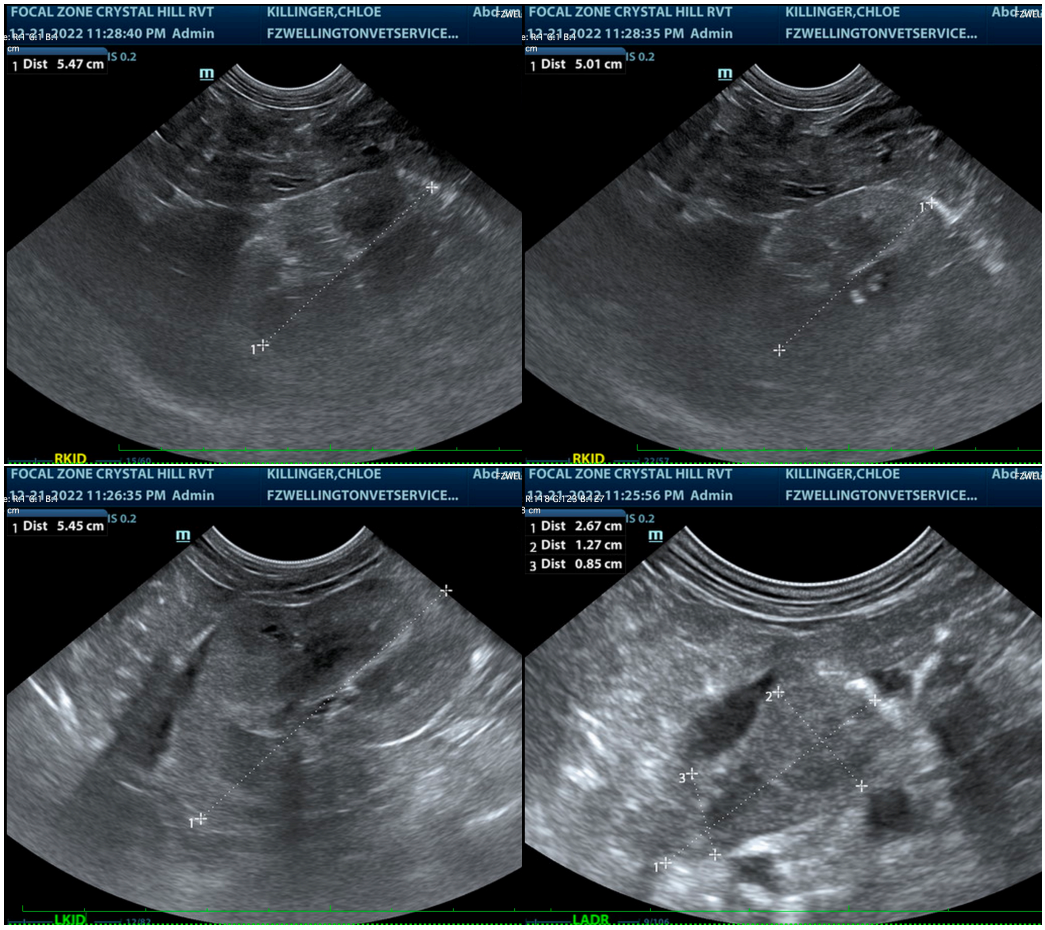


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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
Beth.Johnson@sonopath.com