



## PATIENT

Cruz Miller

## SPECIES

Canine

## BREED

Portuguese Water Dog

## SEX

Neutered Male

## AGE

11 Years

## WEIGHT

63 lbs

## INTERPRETED BY

Beth Johnson, DVM  
DACVIM

## IMAGING PERFORMED BY

Julia Bakker, DVM

## HOSPITAL NAME

Orange Blossom  
Veterinary Imaging

## REFERRING VET

Richard Hall, DVM

## INVOICE

72558

## DATE

1/28/26

## PRESENTING CLINICAL SIGNS

Ongoing amylase, lipase, and liver enzyme elevations

Abnormal PE/Chem/CBC/UA Results: ALT 346 Amylase > 2500 Lipase too high to read

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### Urinary System

Urinary bladder is only mildly distended. Visible contents are anechoic. Urinary bladder wall is unable to be fully assessed for pathology without further distension. No visible masses or definitive cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface. In the face of urinary signs and/or suspected urinary bladder pathology, reassessment after complete filling is recommended.

The area of the prostate is examined without evident prostatic pathology.

The right kidney is normal is size (6.67 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

The left kidney is normal is size (7.58 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

### Adrenal Glands

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Some likely age related parenchymal heterogenicity is present. Visible surrounding vasculature appears normal. Left measures 1.3 cm at the cranial pole and 1.2 cm at the caudal pole. Right measures 1.0 cm at the cranial pole and 1.9 cm at the caudal pole. Multifocal bright echogenic, homogeneous, non-capsule disrupting densities/nodules/possible mineralizations are noted bilaterally, including the largest which is a 0.80 cm in diameter density in the cranial pole of the left adrenal gland, and a 0.90 cm in diameter echogenic density in the cranial pole of the right adrenal gland.

### Spleen

The 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). An approximately 1.9 cm x 1.1 cm non-capsule disrupting hypo- to anechoic nodule is noted near the cranial aspect of the spleen. Splenic vasculature appears normal.

### Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is mildly heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion

Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. Several discrete, non-shadowing densities, one of which could represent a non-shadowing, non-obstructive cholecystolith are noted, measuring approximately 0.60-0.70 cm in



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diameter. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

### **Gastrointestinal**

The visible stomach wall is normal in thickness 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. 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**

Pancreas is prominent (enlarged) in size and mildly irregular in shape with a slightly undulating contour. Parenchyma is coarse in echotexture and heterogenous to hypoechoic in echogenicity.

### **Free Abdomen**

There is no visible free peritoneal effusion noted in these images.

There is no apparent pathologic lymphadenopathy noted in these images.

## ULTRASONOGRAPHIC FINDINGS

- Bilateral adrenomegaly – In a patient diagnosed with hyperadrenocorticism, this finding is most consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism. This finding can also be seen with stress and/or normal patient variant. Interpret in combination with clinical signs of hyperadrenocorticism and/or other adrenal disease. While less likely, bilateral adrenal adenomas, pheochromocytomas, other can't be definitively ruled out.
- Mildly heterogenous liver – These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.
- Moderate gallbladder debris - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili. Non-obstructive, non-shadowing cholecystoliths are suspected.
- Chronic low-grade smoldering pancreatitis can't be ruled out and should be suspected in the face of appropriate clinical signs.
- Hypo to anechoic splenic nodule – likely represents a benign lesion such as a cyst, hematoma, nodular hyperplasia, extramedullary hematopoiesis, etc., however while considered less likely, infiltrative neoplasia can mimic benign lesions, and cannot be ruled out.



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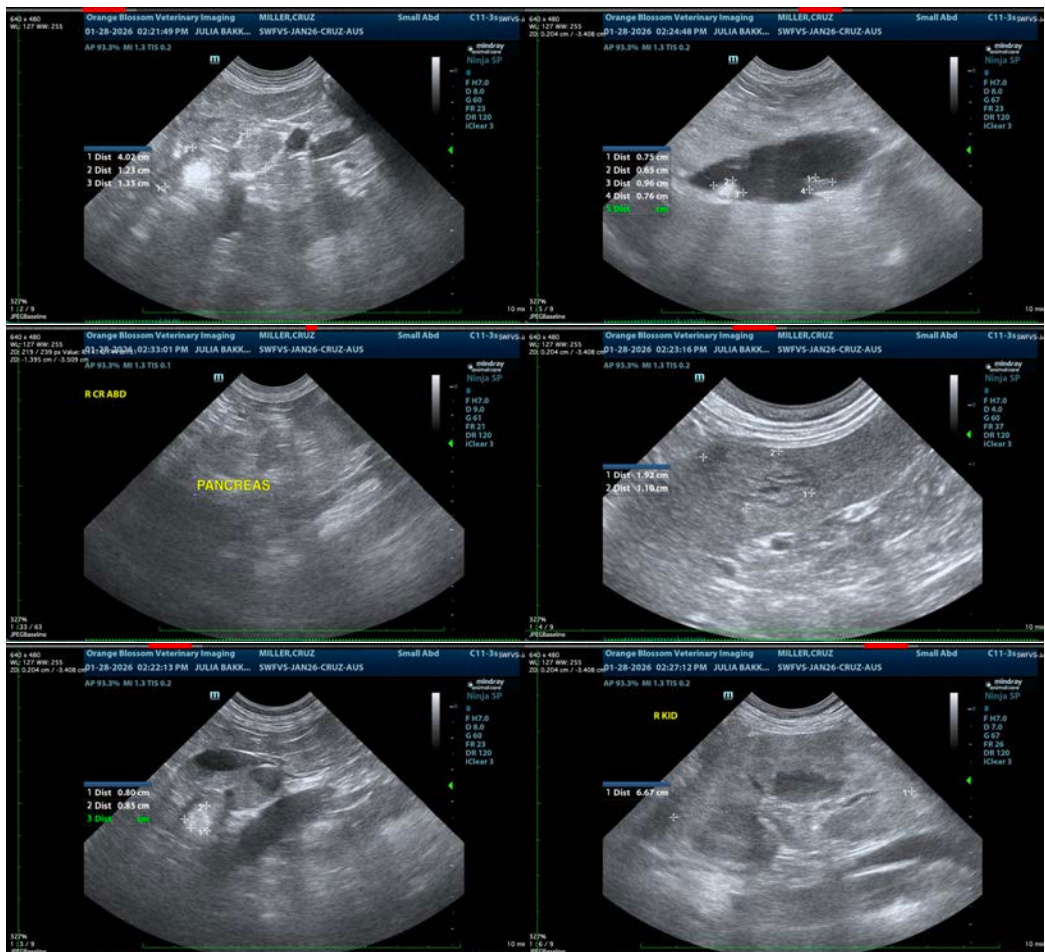
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

If not recently evaluated, a urinalysis and, if indicated based on urinalysis results, urine culture is recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

A blood pressure is also recommended.

While chronic low-grade smoldering pancreatitis can't be ruled out and could be contributing to patient's reported laboratory abnormalities, amylase and lipase are not very specific. Therefore, if further evaluation of the pancreas is recommended, a quantitative PLI is recommended if not already evaluated.

In the meantime, the adrenal gland changes should be interpreted in combination with any clinical history of hyperadrenocorticism, which, if present would warrant further hormone testing, beginning with a low-dose Dexamethasone suppression test.





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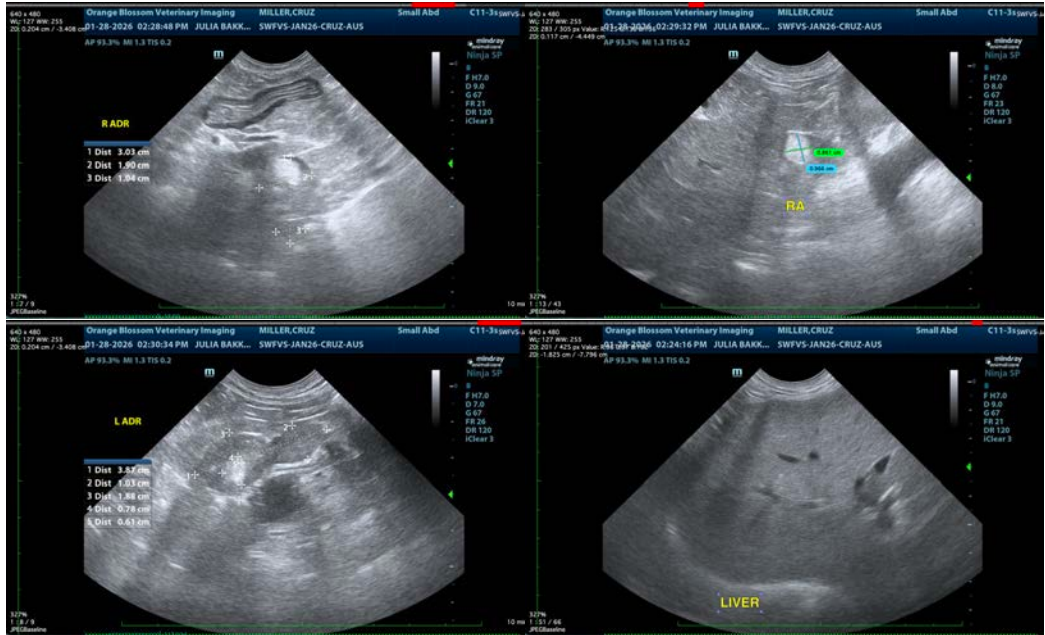
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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**  
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