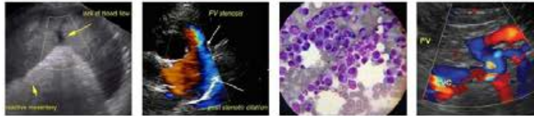

PATIENT

Seven Samon

SPECIES

Canine

BREED

English Bulldog

SEX

Spayed Female

AGE

10 Years

WEIGHT

58 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING BY

Loetitia Saint-Jacques, LVT

HOSPITAL NAME

Brighton Greens VH

REFERRING VET

Dr. Robin Janeway

INVOICE

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PRESENTING CLINICAL SIGNS

No sedation- History: new onset of seizures. Patient came in for dermal work up and started Apoquel and cephalexin. 9 days after starting medication patient had 2 seizures 12 hours a part. New BW performed showed a moderate increase in ALP. Stopped medications. Patient started zonisamide and scheduled LDDST since owner thought patient was symptomatic for cushings and if patient had pheochromocytoma, seizures could be possible. This test came back normal and not consistent with Cushing's. BPM was also normal.
Abnormal PE/Chem/CBC/UA Results: Physical exam findings: skin cleared up Abnormal CBC values: WNL Abnormal Chemistry Values: ALP 2000 Abnormal UA Values: USG 1.017, 2+ proteinuria

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.

The right kidney is normal in size (6.0 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 in size (5.0 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. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The left adrenal gland measures 2.77 cm long x 1.26 cm at the cranial pole and 0.70 cm at the caudal pole. The right adrenal gland measures 0.67 cm at the cranial pole and 0.74 cm at the caudal pole.

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). No focal nodules or masses are observed. 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. An approximately 1.0-1.5 cm hypoechoic nodule is noted in the left liver. A cystic non-vascular, approximately 2.0 cm nodule is noted in the caudal right liver. In the right to mid caudal liver, there is a 2.0 cm x 3.0 cm primarily homogeneous, iso- to slightly hypoechoic vascular mass. Visible vasculature and biliary tree appear normal without distension or congestion.

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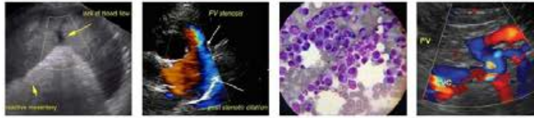

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IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

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The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

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.

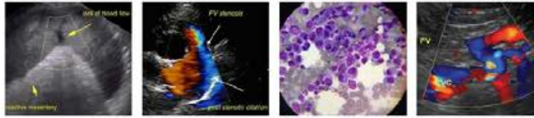
Free Abdomen

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

The sublumbar lymph nodes are prominent in size with swollen capsular contour. Normal elongated shape (length to width ratio) is maintained. There is no loss of parenchymal detail.

ULTRASONOGRAPHIC FINDINGS

- Bilateral adrenomegaly – Most consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism. The left adrenal gland is slightly plumper than the right. Given this patient's history, an early or emerging pheochromocytoma versus hyperadrenocorticism cannot be definitively ruled out but is considered lower on the differential list.
- **Liver nodule –** Differentials for a discrete liver nodule include primarily benign changes such as nodular hyperplasia, fibrosis of an old hematoma, granuloma, etc.; however, while considered less likely, primary hepatic neoplasia, infiltrative round cell neoplasia and metastatic disease can mimic benign lesions and cannot be definitively ruled out.
- Liver cyst
- **Mid to right caudal liver mass –** More concerning for infiltrative neoplasia, but both a benign primary liver tumor such as an adenoma/hepatoma as well as a malignant but well differentiated hepatocellular carcinoma are differentials (cannot be differentiated without tissue sampling). Marked nodular hyperplasia is possible for that nodule as well but considered less likely.



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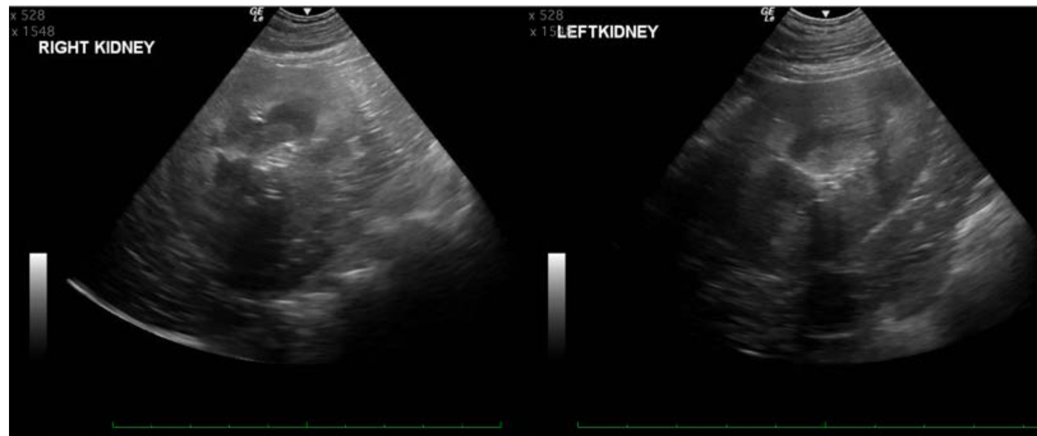
- **Reactive sublumbar lymph nodes –** infiltrative neoplastic disease cannot be ruled out but is considered less likely.

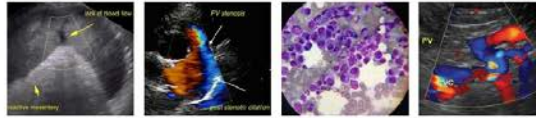
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given this patient's reported proteinuria, a urine protein to creatinine ratio is recommended to help quantify the proteinuria and help dictate treatment, as proteinuria could have predisposed to a vascular event and therefore the seizures. If the UPC is >2.0 in a non-azotemic animal or >0.5 in an azotemic animal, treatment in the form of an ACE inhibitor, antithrombotics, fatty acids, etc. is recommended. Blood pressure is also recommended, as was reportedly evaluated and was noted.

Given this patient's proteinuria, clinical signs, increased ALP, and ultrasound changes, pituitary dependent hyperadrenocorticism is still high on the list of differentials. Given the reportedly normal low-dose Dexamethasone suppression test, recommendations include evaluating for atypical hyperadrenocorticism with a full adrenal panel/ACTH stimulation test to the University of Tennessee. Given this patient's seizures, however, treatment for the proteinuria is recommended regardless of hormone testing results. Testing for pheochromocytoma may be available in the form of urine catecholamine/metanephrines, and recommendations are to contact IDEXX laboratories for more information regarding the availability of that test to further look for evidence of possible pheochromocytoma.

A fine needle aspirate of the solid iso- to hypoechoic mid caudal liver mass is recommended if patient's coagulation status is appropriate.





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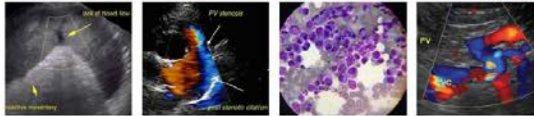

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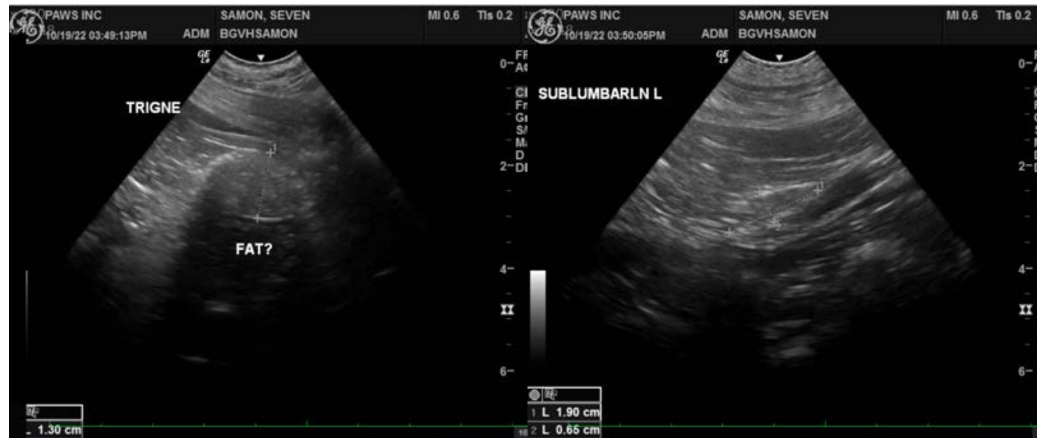

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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