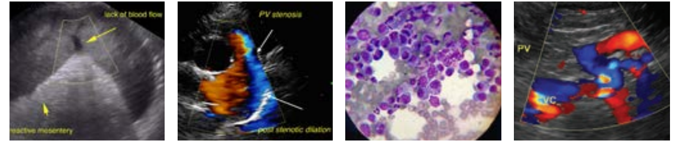


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Cali Oreo MacDonald

SPECIES

Canine

BREED

Portuguese Water Dog

SEX

Spayed Female

AGE

13 Years

WEIGHT

18.5 kg

INTERPRETED BY

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

IMAGING PERFORMED BY

Dr. Trudeau

HOSPITAL NAME

Petworks Vet Hospital

REFERRING VET

Dr. Trudeau

INVOICE

41846

DATE

10/5/22

PRESENTING CLINICAL SIGNS

Presented for vomiting, soft stool, decreased appetite, weight loss. Abdominal pain on PE; no evidence of pu/pd

Abnormal PE/Chem/CBC/UA Results: Elevated Ca on bloodwork as well as other mild changes (mild elevation AlkP, Albumin); elevated amylase and lipase; Abnormal cPL

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (5.42 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.3 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is large in size measuring 1.65 cm at the cranial pole, 0.92 cm at the caudal pole, and 2.82 cm in length. It is observed in its normal position cranial to the left renal artery. It is abnormal in appearance in that the cranial pole is enlarged and heterogeneous, most consistent with a nodule on the cranial pole of the left adrenal gland. There is no obvious evidence of vascular invasion.

The right adrenal gland is large, measuring 1.72 cm at the cranial pole, 0.78 cm at the caudal pole, and 3.0 cm in length. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is heterogeneous and irregular in appearance. No evidence of vascular invasion visualized.

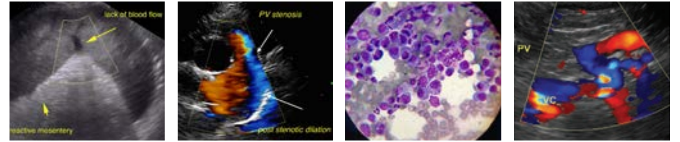
Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There is a hyperechoic nodule visualized within the parenchyma measuring 1.02 cm x 0.92 cm.

Liver

The liver is large and irregular. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There is a hyperechoic nodule visualized on the left side of the liver measuring 1.66 cm x 1.59 cm. Additionally, there is a similar hyperechoic nodule on the right side measuring 1.45 cm in diameter. There are too numerous to count ill-defined, irregular, hypoechoic nodules throughout the liver, varying in size between 0.50-2.5 cm.

The gall bladder lumen is significantly distended. Some areas of the wall appear mildly thickened with adherent debris. There is a large amount of primarily non-organized echogenic debris. There is no evidence of bile duct dilation.



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Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Jejunum wall measures 0.32 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

ULTRASONOGRAPHIC FINDINGS

- Irregular heterogeneous left adrenal gland with an enlarged cranial pole – Left adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

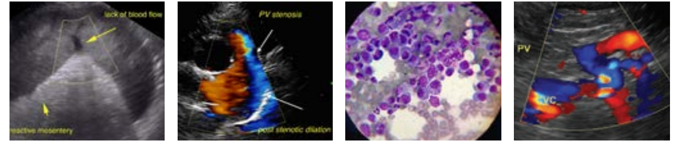
- Heterogeneous right adrenal gland with a prominent cranial pole – Similar differentials exist for both adrenal glands. The right adrenal has less of a focal mass effect.

- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.

- Hyperechoic nodule visualized in the spleen – Hyperechoic nodules trend towards a benign etiology, but underlying neoplastic change cannot be excluded.

- Large, irregular, heterogeneous liver with hypo- and hyperechoic nodules – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The nodules observed trend toward a more benign process but underlying neoplasia cannot be ruled out.

- Large gallbladder debris – A large amount of debris is evident in the gall bladder with no evidence of a mucocele or associated inflammation at this time. This could represent an early mucocele or cholestasis, with minimal evidence of associated inflammation at this time. Continued monitoring of labwork and ultrasound are warranted for progression of this lesion.



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Ursodiol therapy could be considered.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

An obvious cause for the vomiting, diarrhea, weight loss, and inappetence is not visualized. The liver is large and irregular. Consider a liver function test and a fine needle aspirate of the liver provided coagulation parameters are normal. There are irregularities in both adrenal glands. This could be an incidental finding at this time. These lesions could represent benign lesion, cancerous lesions, and they could be actively secreting hormones or be non-active. Consider the following:

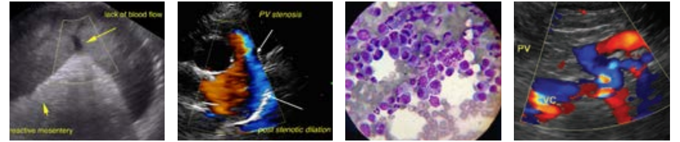
- If signs of cushings are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice)
- If cushings is suspected and supported by adrenal function testing, consider medical therapy with lysodren or trilostane and/or surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT, as bilaterally adrenalectomy is challenging)-There is significant risk for complication.
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma
- Due to the invasive nature of these masses a CT scan is recommended to evaluate for metastasis and vascular invasion.
- If no symptoms of cushings are present, you could consider a contrast CT to determine if there is evidence of vascular invasion or markers for malignancy, etc. If surgery is not an option, I would recommend continued monitoring with ultrasound (in 4-6 weeks).
- Some aggressive adrenal tumors can grow quickly and there is risk for acute hemorrhage from vascular invasion.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

There is a large amount of debris within the gallbladder, but no significant gallbladder wall thickening or inflammation is noted. Recommend starting Ursodiol therapy and continued monitoring.

The options moving forward with the hyperechoic nodule in the spleen include a fine needle aspirate and continued monitoring with ultrasound.

As stated earlier, I did not see a clear association with these findings and the vomiting, diarrhea, and weight loss reported, unless there is significant liver dysfunction. You could consider further pursuing underlying GI disease with a change in diet to a novel protein/hydrolyzed protein prescription diet, pursuing a GI a panel to Texas A&M for a qualitative PLI, TLI, cobalmin and folate, chronic probiotic therapy, etc. Additionally, consider an ionized calcium to determine if the hypercalcemia is real and a significant factor. If it is, then consider a PTH/PTHrP level to look for causes of hypercalcemia in addition to a thorough digital rectal exam to look for anal gland neoplasia.



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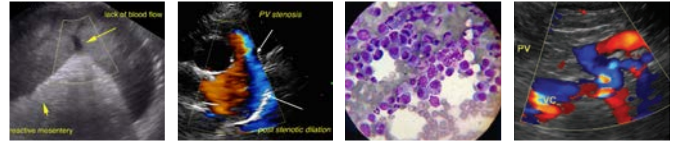

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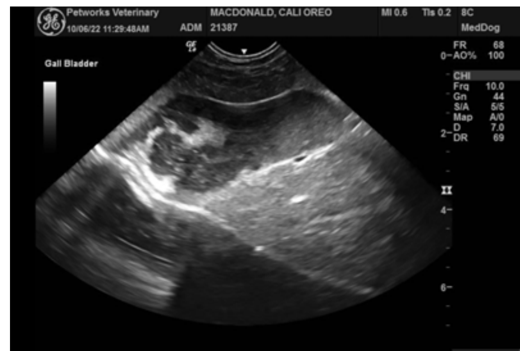

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

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